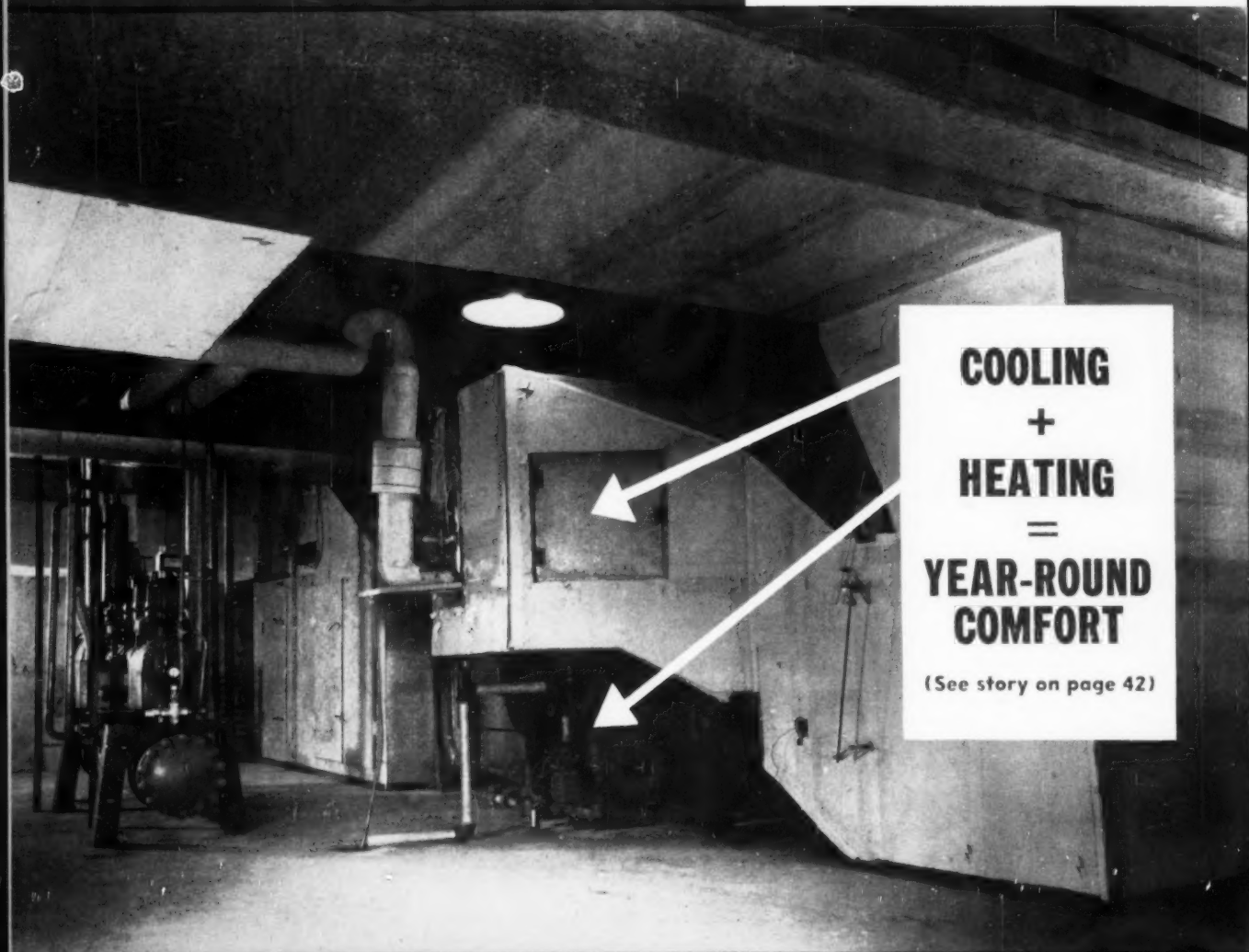


# COMMERCIAL REFRIGERATION & AIR CONDITIONING

**FEBRUARY 1953**

- "Help Wanted" Ads Provide Sales Leads for Dealer
- Air Conditioning Investment Pays Bank Big Dividends
- "Switch Over" System Supplies Double-Duty Cooling
- Watch That Hand in the Till—It May Be Yours!
- How To Figure Pressure Drop In Radiant Heating Plants



**COOLING  
+  
HEATING  
=  
YEAR-ROUND  
COMFORT**

(See story on page 42)

**MERCHANDISING, SELLING, INSTALLATION AND MAINTENANCE OF  
AIR CONDITIONING AND COMMERCIAL REFRIGERATION EQUIPMENT**

# There's Added Value in **COPELAMETIC** THE *Accessible* HERMETIC



MODEL  
Z-200WA  
2 H.P.  
Air-Water Combination  
COPELAMETIC

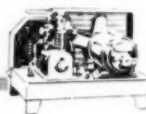
The big, dollar-saving extra in Copeland refrigeration units is accessibility. The elimination of belts, seals and manual oiling cut service needs 90%. But Copeland engineers went a long step forward by adding the practical feature of accessibility. They made it possible for the service men to take care of parts replacement and adjustments

right on the spot, when the rare occasion arose.

Air-cooled, remote COPELAMETICS range from 1/4 H.P. through 3 H.P. There are water-cooled, remote units from 1/3 H.P. to 7 1/2 H.P. inclusive. There are self-contained COPELAMETICS for all applications.



**Copeland**  
DEPENDABLE *Electric* REFRIGERATION



REFRIGERATION UNITS (OPEN TYPE AND COPELAMETIC) WATER COOLERS

**COPELAND REFRIGERATION CORPORATION • SIDNEY, OHIO**

Circle No. 1 on Reader Service Card



- COIL HOUSING NUT →
- NAME PLATE →
- COIL HOUSING →
- UPPER COIL SUPPORT SLEEVE →
- COIL ASSEMBLY →
- COIL PLATE →
- COIL PLATE SLEEVE →
- COIL SUPPORT SPRING →
- COIL HOUSING GASKET →
- CAP SCREW →
- ENCLOSING TUBE ASSEMBLY →
- PLUNGER AND PISTON ASSEMBLY →
- BODY GASKET →
- BODY →
- 5427 SEAL CAP →

You check every part of an Alco Solenoid Valve in about two minutes. They can be completely dismantled without removal from the line. Remove coil and housing, open two cap screws, and the valve is ready for examination and cleaning.

SIMPLE, ISN'T IT? And Alco Solenoids are packless, tight-seating, quiet. They're completely moisture-proof to eliminate coil burn-out. Alco Solenoids assure *easier servicing* for you and *longer service* for your customers.

SEE YOUR ALCO WHOLESALER



**ALCO VALVE CO.**

843 KINGSLAND AVE. • ST. LOUIS 5, MO.

Designers and Manufacturers

of Thermostatic Expansion Valves; Evaporator Pressure Regulators; Solenoid Valves; Float Valves; Float Switches.  
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**LOTS OF  
COLD CASH  
FOR YOU IN  
THESE**

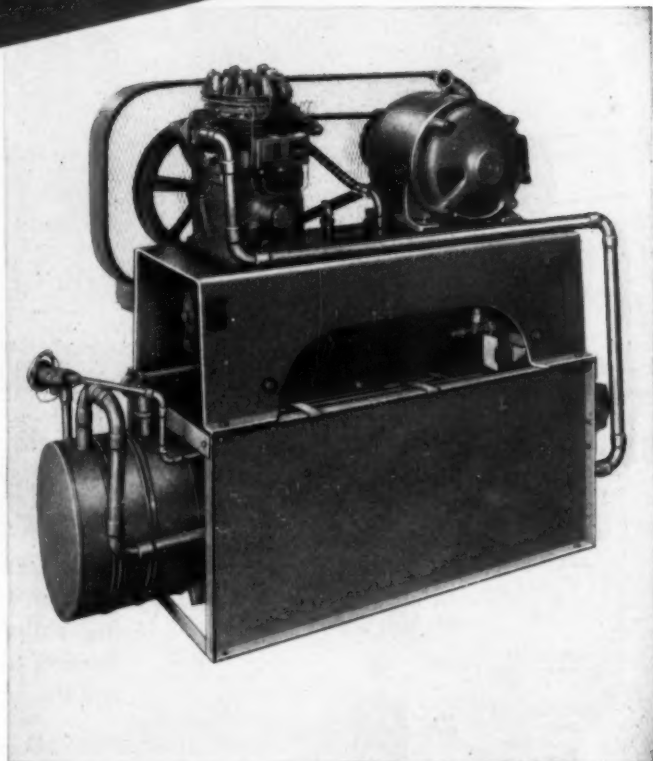


**LIQUID CHILLERS**

There's a whole new refrigeration market waiting for you in these BRUNNER Liquid Chillers! Temperature control in industrial processing is now vital in hundreds of different industries—foods, chemicals, oils, paper, rubber, metals, etc. Smaller commercial applications in air conditioning and refrigeration are also profitable prospects for Brunner Liquid Chillers. Two types now available—dry expansion or ice builder type. Both are powered by dependable, quiet slow-speed Brunner open-type condensing units. Both are easy to install—easy to service in the field...

#### **NEW DX LIQUID CHILLER**

A self-contained, compact chiller—completely assembled and tested at the factory—requires only power and liquid connections. Economical, efficient, adaptable. In 4 sizes—5, 7½, 10 and 15 H.P. Matched components up to 150 H.P. also available for field set-up.



#### **ICE BUILDER TYPE**

Stores up ice deposits for use during peak load requirements—provides ample liquid cooling with minimum of connected horsepower. Copper-lined cabinet—copper plates—nothing to rust or corrode. From ½ H.P. to 7½ H.P., factory assembled—larger models shipped as two components for easy field hook-up.

See your Brunner representative or write:

**BRUNNER MANUFACTURING COMPANY**  
Dept. G-23, UTICA, N.Y., U.S.A.

**YOU'LL ALWAYS  
BE GLAD YOU  
SOLD A**





Established in 1944 as  
THE REFRIGERATION INDUSTRY, this  
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# COMMERCIAL REFRIGERATION & AIR CONDITIONING

FEBRUARY, 1953

VOLUME 10, NO. 2

## THE STAFF

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BENEDICT W. HOWES  
Editorial Assistant

EDWIN M. JOSEPH  
Circulation Director

HAROLD F. BEHM  
Franchise Manager

ROBERT J. DUNCANSON  
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Address all communications to  
COMMERCIAL REFRIGERATION  
AND AIR CONDITIONING  
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Cleveland 13, Ohio  
Phone: Superior 1-9622  
Teletype: CV-233

## SALES OFFICES

**NEW YORK**  
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and AIR CONDITIONING

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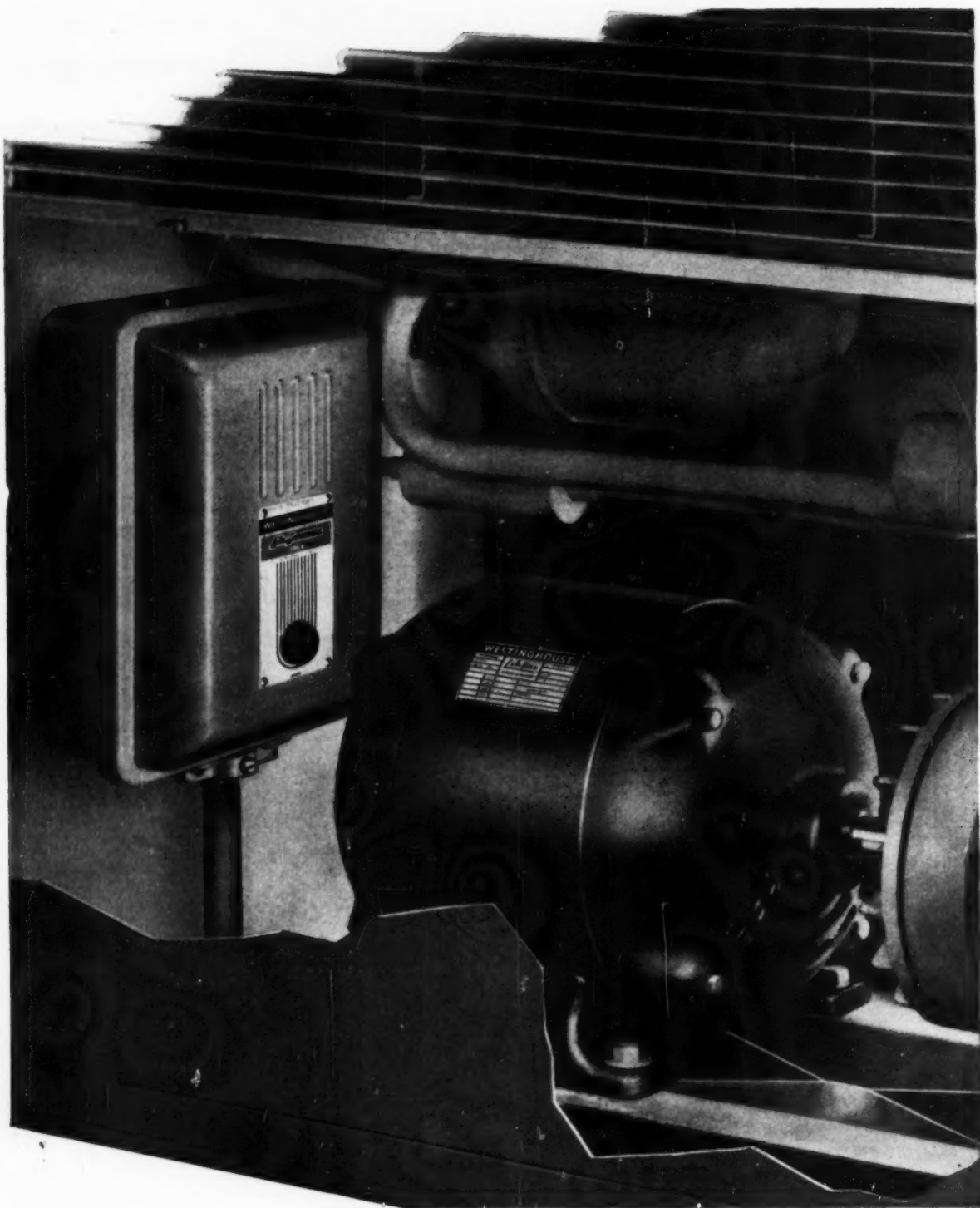
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WHAT ***Life-Line*** REALLY DELIVERS IS MORE SERVICE...LESS SERVICING

Circle No. 4 on Reader Service Card

FEBRUARY, 1953 • COMMERCIAL REFRIGERATION

# So quiet you almost hear the temperature drop!

Air-conditioning equipment should be "felt", not "heard". That's where you get an important advantage with Life-Lines—quiet, vibration-free operation.

Take the smooth-running Life-Line motor. You can actually edge balance a coin on a Life-Line through a start, run, stop cycle. It's that smooth running! The reason? Instead of trying to dampen out noises that may exist, noises have been minimized through motor design, accuracy of manufacture and careful balancing of parts to avoid vibration. Quietness of operation is assured.

Unique starter design reduces electrical and mechanical noises to a new low. Important also is positive action of knife-edge bearing maintaining precise contact alignment. Here, too, quietness is assured.

Together, Life-Line motors and Life-Linestarters® offer you a new concept of motor and control performance. You get more service . . . with less servicing. Ask your Westinghouse representative for complete details on both, or write Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania.

J-21683-A

YOU CAN BE **SURE**...IF IT'S  
**Westinghouse**



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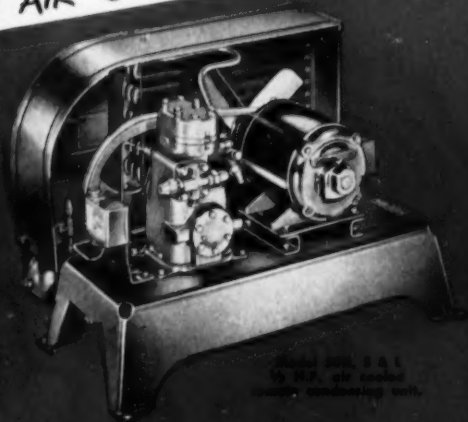
For the  
first time

# Tecumseh offers

## REMOTE UNITS

IN A COMPLETE RANGE OF SIZES FROM  $\frac{1}{4}$  to 15 H.P.

AIR COOLED



For remote units up to 15 H.P., investigate this new, improved Tecumseh line now available to the jobber trade. The medium range ( $\frac{3}{4}$  to 3 H.P.) incorporates the recently developed series of "V" type compressors and the new FFP with oil pump ( $\frac{3}{4}$  H.P.). These compressors are designed for maximum efficiency, lower cost, compactness of size and increased capacity. All of these factors are powerful selling points for you when selling these units to the field. The lower range ( $\frac{1}{4}$  to  $\frac{3}{4}$  H.P.) and the high range (5 to 15 H.P.) use the dependable 1400, 1000, R & S compressors.

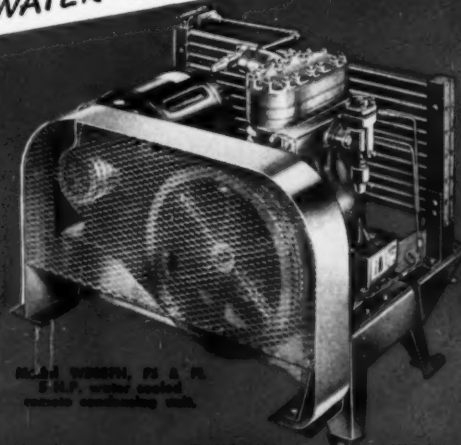
Included in the remote line are air cooled models from  $\frac{1}{4}$  to 3 H.P., combination air-water cooled models from  $\frac{1}{2}$  to 3 H.P. and water cooled models from  $\frac{1}{2}$  to 15 H.P.

The complete line also includes hermetics from  $\frac{1}{8}$  to  $1\frac{1}{2}$  H.P. and self-contained units from  $\frac{1}{4}$  to  $\frac{3}{4}$  H.P. Look to Tecumseh for a complete line of quality units for all of your refrigeration requirements up to 15 H.P.

AIR AND WATER COOLED



WATER COOLED



For full information write:

**TECUMSEH PRODUCTS**

TECUMSEH, MICH.

*Company*

**TECUMSEH**

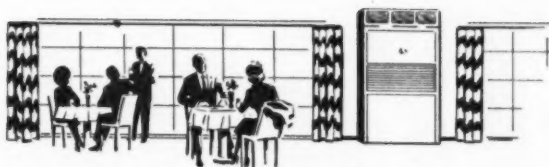
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★ The world's largest  
producer of condens-  
ing units for the re-  
frigeration industry. ★

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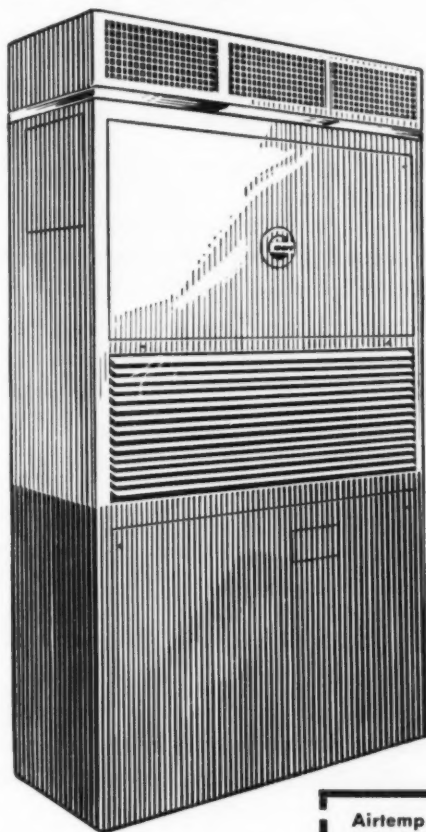


## WHY CHRYSLER AIRTEMP IS STILL THE LEADER IN "PACKAGED" AIR CONDITIONERS

There are many reasons why Chrysler Airtemp sells more "Packaged" Air Conditioners. One very important reason is the nationally advertised and respected Chrysler Airtemp name.

This name is your customer's guarantee as well as yours, of **PROVEN DEPENDABILITY**. Chrysler Airtemp pioneered the "Packaged" Air Conditioner with the high speed sealed compressor fifteen years ago. All the engineering know-how and improvements developed over this period of years are yours . . . when you sell Chrysler Airtemp.

This compact "Packaged" unit makes your selling job easier because it is completely engineered . . . completely flexible. The Chrysler Airtemp name means *greater profit for you!*



"Packaged" Air Conditioners  
Six models from  
2 to 15 H. P.  
capacity. Meets  
every cooling  
need.

Get all the facts . . .  
mail the coupon today



# Comfort Zone



# Chrysler Airtemp

**HEATING • AIR CONDITIONING**  
for HOMES, BUSINESS, INDUSTRY

Airtemp Division, Chrysler Corporation, Dayton 1, Ohio

Airtemp Division, Chrysler Corporation  
P.O. Box 1037, Dayton 1, Ohio

CR&AC-2-53

Please send full details on the Chrysler Airtemp Comfort Zone "Packaged" Air Conditioning proposition.

Name \_\_\_\_\_

Address \_\_\_\_\_ Phone \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

no matter  
how

# Large

or **SMALL** the application

there's a **SPORLAN**  
Peak Performance  
**Solenoid Valve**  
to fit your needs!

Nothing can touch the  
Peak Performance of  
**SPORLAN SOLENOID VALVES...**

for Peak Performance is Wound  
Right Into The Sporlan Solenoid Coil..  
then *Permanently Sealed In!*

Sporlan solenoid coils are layer wound (not random wound) and interwoven with layers of cotton thread. This construction prohibits build-up of damaging electrical pressure across the turns of wire, thus minimizing possibilities of coil burnouts. After the coils are wound, they are twice dipped in high temperature insulating and water repellent varnish to thoroughly impregnate the cotton thread insulation, and are baked after each coating.

**As a final precaution,** the coils are then dipped in a protective sealer, and again baked to prevent any moisture infiltration.

**SPORLAN Type 171** Solenoid Pilot Control offers the latest developments in the field of Pilot Controls, which Sporlan has pioneered for many years. It is made in *one size only* and used in place of extra large Solenoid Valves on F-12, and F-22. It costs less, is more economical to install, and assures positive shut-off of the liquid line.

*Write for*  
BULLETINS 30-10 and 30-70  
*Today!*

## SPORLAN VALVE COMPANY

7525 SUSSEX AVE. ST. LOUIS 17, MO.

EXPORT DEPARTMENT

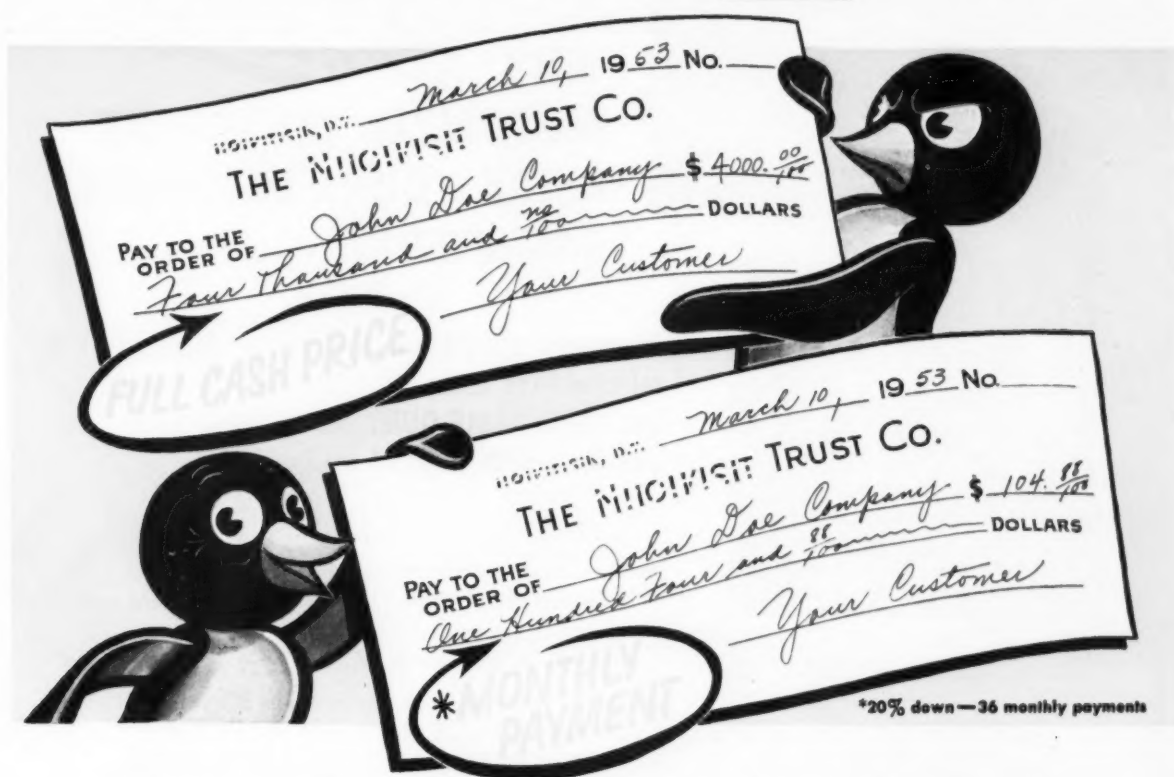
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# IF YOU WERE *Your Prospect* which check would YOU mail?

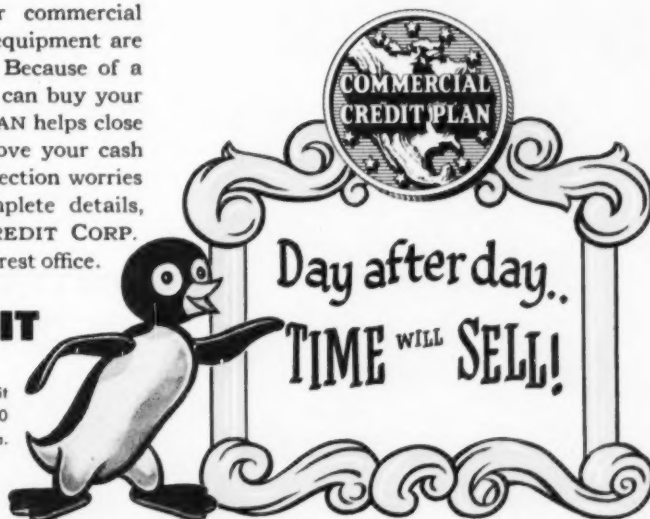


## Feature Time Payments to close more sales with the *COMMERCIAL CREDIT PLAN*

**M**ORE AND MORE prospects for commercial refrigerating and air conditioning equipment are becoming, of necessity, **TIME BUYERS**. Because of a tight cash position it's the only way many can buy your equipment. The **COMMERCIAL CREDIT PLAN** helps close sales . . . lower accounts receivable, improve your cash position. And you turn your credit and collection worries over to **COMMERCIAL CREDIT**. For complete details, facts and figures, write **COMMERCIAL CREDIT CORP.** 14 Light Street, Baltimore 2, Md., or our nearest office.

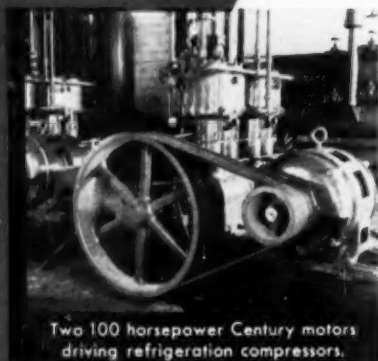
### **COMMERCIAL CREDIT CORPORATION**

A service offered through subsidiaries of Commercial Credit Company, Baltimore... Capital and Surplus over \$125,000,000  
...offices in principal cities of the United States and Canada.

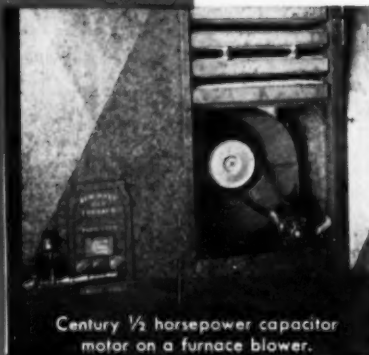




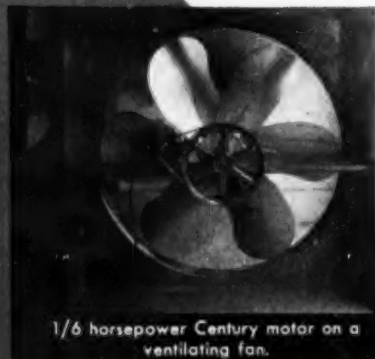
100 horsepower Century motor on a glass blowing machine.



Two 100 horsepower Century motors driving refrigeration compressors.



Century 1/2 horsepower capacitor motor on a furnace blower.



1/6 horsepower Century motor on a ventilating fan.

## WHY *Century* MOTORIZED EQUIPMENT KEEPS YOUR CUSTOMERS SATISFIED...

The motor specifications—where skillfully selected—to assure the **TOP PERFORMANCE** and **DEPENDABLE QUIET SERVICE** that is built into each class of equipment.

Refrigeration compressors require one combination of operating characteristics and specifications—fans and blowers another combination—various types of heating equipment still another.

In over 50 years, Century has developed a wide line of types of motors with literally hundreds of specifications to choose from. It is easy to **ENGINEER YOUR PRODUCT PERFORMANCE—THROUGH SKILLFUL MOTOR APPLICATION.**

If you have motor service problems, phone or write to any of Century's 28 District offices regarding Century's national network of service stations—the motor exchange plan will serve you whether your motors are in or out of warranty.

Specify Century Motorized Equipment—get top equipment performance—dependable quiet service—keep your customers satisfied.

**CENTURY ELECTRIC COMPANY**  
1806 Pine Street • St. Louis 3, Missouri

Offices and Stock Points  
in Principal Cities



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**JIM HAILEY**  
Factory Representative Tennessee-Arkansas Territory  
serving you through these  
reputable wholesalers



**VANCE RUTLEDGE**  
N. O. Nelson Co.  
Memphis, Tennessee



**RAY HOOTOR**  
Kelvinator Div.  
Arthur Fulmer Inc.  
Memphis, Tennessee



**HAYDEN LASLEY**  
N. O. Nelson Co.  
Jackson, Mississippi



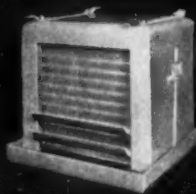
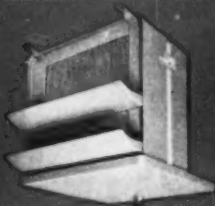
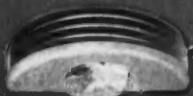
**CLARENCE HOLDER**  
N. O. Nelson Co.  
Little Rock, Arkansas



**GEORGE CROW**  
United Refrigeration & Supply  
Memphis, Tennessee

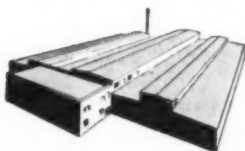


**R. W. REED**  
J. E. Hurston Co.  
Little Rock, Arkansas



## CONSULT YOUR McQUAY WHOLESALE FOR EVERY REFRIGERATION NEED

McQuay is proud of its complete line of *proved and preferred* refrigeration equipment and of the men who represent the company to you. There is a McQuay wholesaler in your territory, qualified by long experience and backed by the entire McQuay sales and engineering organization, who can give you the right answer to your specific problem — whether it's selling help, technical advice or quick action you want. Consult your McQuay wholesaler or write McQuay, Inc., 1643 Broadway N. E., Minneapolis 13, Minn.



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Minneapolis 13, Minn.



Plant 2—1729 Broadway N.E.  
Minneapolis 13, Minn.



Plant 3—4th and Park Ave.  
Faribault, Minn.

# McQuay INC.



REFRIGERATION  
HEATING  
AIR CONDITIONING

MANUFACTURERS OF HEAT TRANSFER EQUIPMENT SINCE 1923

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and AIR CONDITIONING • FEBRUARY, 1953

# specify

## for an unbeatable combination

Acme can furnish the unbeatable combination for industrial liquid chilling. When you specify an Acme Dry-Ex liquid chiller, heat exchanger, or oil separator, you'll get a flexible combination with many years of low cost, trouble free service.

### ACME CONDENSERS

Offered in Shell and Coil and Shell and Tube designs, the ACME line of condensers is very complete—more than 120 standard sizes are offered for use with Freon, plus seven sizes in Model SC Shell and Finned Coil, with twelve additional sizes in Model J Shell and Tube Condensers. Both are designed for Freon 12 or Freon 22 Refrigerant. ACME Condensers are inexpensive, have drainable coils, are easy to clean and are compact, sturdily built and extremely efficient.

### ACME HEAT EXCHANGERS

Available in 16 standard sizes, in capacities from 1/2 to 180 tons, ACME Heat Exchangers increase compressor capacity, prevent flash gas in liquid line, eliminate expansion valve vibration or chattering and offer true counter-flow operation. Model H has shell and coil construction. Also available in "U tube" bundle construction. ACME Heat Exchangers offer a practical solution when compressor capacity is on the border line for load requirements.

### ACME OIL SEPARATORS

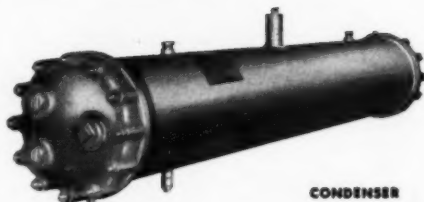
Are offered in a complete range of sizes, are economical and efficient to operate, easy to install and offer positive oil separation. Offered in a complete range of sizes, they are scientifically engineered for use with Ammonia or Freon. Series F Units have a central mounting strap and may be mounted directly on the Compressor base. Series FK and AK Models have a support bracket welded to the top.

### ACME DRY-EX\* WATER COOLERS

Designed to meet an extensive variety of either commercial or industrial applications, ACME DRY-EX Water Coolers are offered in more than 700 combinations of refrigerant heads, baffle spacings and tube lengths. ACME Straight through tube construction permits the refrigerant circuit to be increased twice as frequently as in the "U tube" design. Baffles have a tighter fit with the shell and with the tube, and straight through tubes can easily and economically be replaced in the field.

**ACME ALSO MANUFACTURES:** Freon Condensers—Ammonia Condensers—Bto-Cold\* Industrial Unit Coolers—Evaporative Condensers—Liquid Receivers—Pipe Coils—Shell and Tube Condensers—Shell and Coil Condensers—Heat Exchangers—Flow-Cold\* Liquid Chillers.

# Acme



CONDENSER



HEAT EXCHANGER



OIL SEPARATOR



WATER COOLER



\*Trade Mark

Write Dept. CF

**INDUSTRIES, INC., JACKSON, MICHIGAN, U.S.A.**

CONTINUOUSLY SERVING THE REFRIGERATION INDUSTRY SINCE 1917  
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**FEBRUARY, 1953 • COMMERCIAL REFRIGERATION**

Circle No. 12 on Reader Service Card →

# Acme



**Pet Milk** walls cold in,  
moisture out with...



FOAMGLAS, the *stay-dry* insulation, keeps moisture out because its sealed glass cells are waterproof, while *ordinary* insulations absorb moisture and lose their efficiency.

Mr. R. O. Jenkins, *Pet Dairy's* Assistant General Manager indicates that was a major reason why FOAMGLAS was specified for insulating the walls, floors and ceilings in their new plant at Columbia, S.C. He writes, "FOAMGLAS has an ideal combination of properties for our low temperature installation... its waterproofness is most important, and we benefit also from its high compressive strength, incombustibility and resistance to rot and vermin."



R. O. Jenkins

# FOAMGLAS<sup>®</sup>

Pittsburgh Corning Corp., Dept. I-23  
Pittsburgh 22, Pa.

Please send me free sample and booklets on use of FOAMGLAS for:

- ☐ Refrigerated Structures
- ☐ Piping and Equipment
- ☐ Normal Temperature Buildings

- ☐ Send engineer to help with specific problem.
- ☐ Advise nearest source of supply.

Name \_\_\_\_\_ TITLE \_\_\_\_\_

Company \_\_\_\_\_

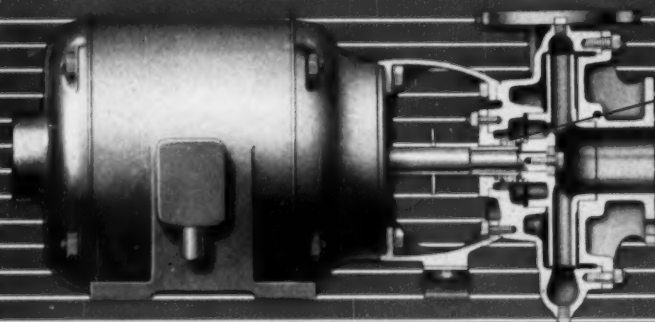
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City \_\_\_\_\_

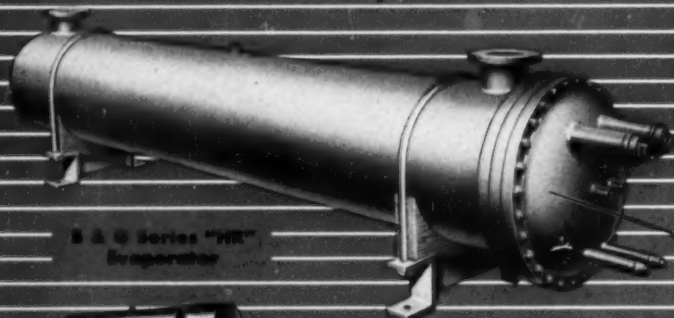
ZONE \_\_\_\_\_ STATE \_\_\_\_\_

**PITTSBURGH CORNING CORPORATION**  
**PITTSBURGH 22, PA.**

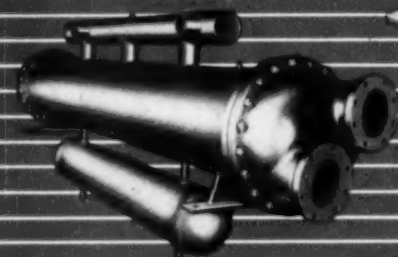
# Plus Value REFRIGERATION AND AIR CONDITIONING EQUIPMENT



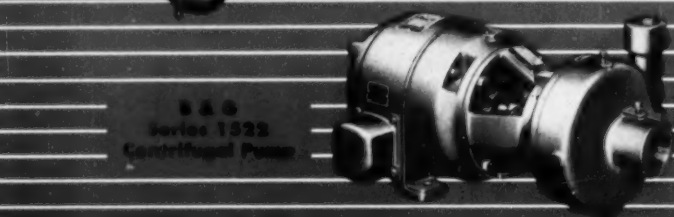
B & G Series 1531  
Centrifugal Pump



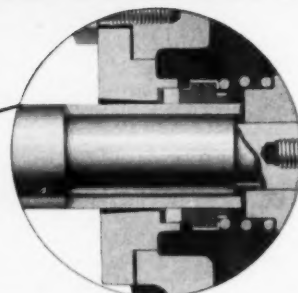
B & G Series "HR"  
Evaporator



B & G Series "CR"  
Condenser



B & G  
Series 1522  
Centrifugal Pump

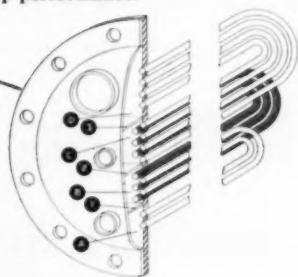


## B & G 1531 UNI-BUILT PUMP WITH NEW REMITE SEAL

Here's a revolutionary new development in pump design...a *plus value* which eliminates leakage—assures long, trouble-free life.

A carbon seal ring faces on a "REMITE" floating seat—a new type of material, *so hard it will scratch glass*—wear-proof and corrosion-resistant. This feature alone makes the 1531 the "buy" for refrigeration and air conditioning installations.

Measure the B & G Series 1531 Pump by any standards you choose...you'll agree that never before have you seen so many warranties of top performance.



## B & G SERIES "HR" EVAPORATOR

You'll find *plus value* in the unique design of this evaporator which prevents oil-trapping in the head passes. The diagram above shows how the lower tubes in each pass are located very close to the baffle plate, permitting any oil entering the passes to travel freely with the Freon vapor back to the compressor.

Other features include movable steel legs, for easy mounting under various conditions. The shell connections extend well beyond the insulation cover—assure easy installation.

### Send for complete file of Catalogs

B & G Catalogs on Centrifugal Pumps, Evaporators, Condensers and Heat Exchangers give full information on the latest in air conditioning and refrigeration equipment.



# BELL & GOSSETT

C O M P A N Y

Dept. CV-45, Morton Grove, Illinois

Canadian Licensee: S. A. Armstrong, Ltd., 1400 O'Connor Drive, Toronto

Circle No. 13 on Reader Service Card

FEBRUARY, 1953 • COMMERCIAL REFRIGERATION



"We're  
definitely  
Sold  
on



## Solenoid Valves"

### HERE IS THE RECORD:

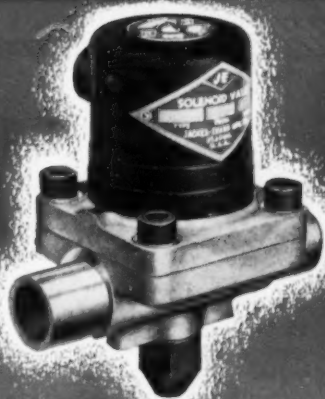
27 Nationally-known manufacturers are using JE Solenoid Valves on their products.

82 Refrigeration and Industrial wholesalers are handling JE Solenoid Valves.

7 Nationally-known hotels use JE Solenoid Valves for temperature control of individual guest rooms (heating and cooling).

2 Large apartment projects use JE Solenoid Valves for temperature control of individual apartments (heating and cooling).

*JE Solenoid Valves are made better to last longer!*



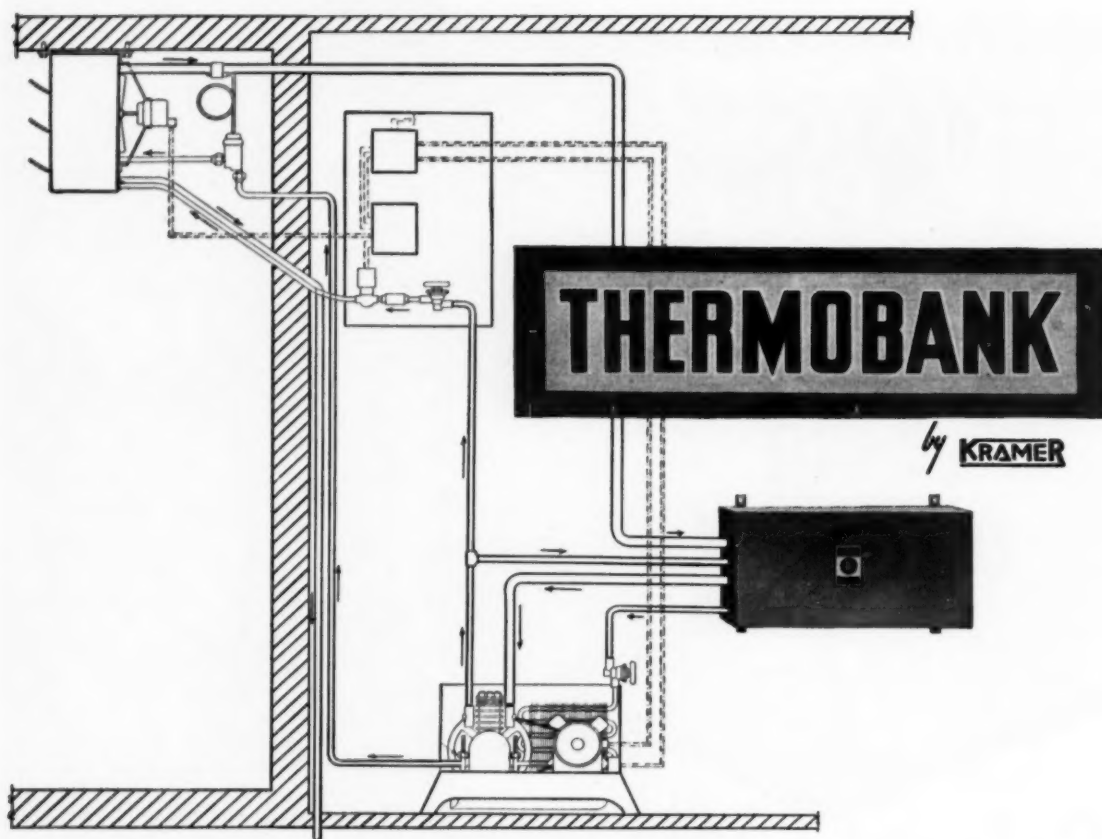
**Unconditionally Guaranteed  
FOR 18 MONTHS**

### ALL JE Solenoid Valves Have these 5 Major Features of Dependability:

1. Tight Seating — no bubble tolerance.
2. Simplicity — only two moving parts.
3. Long Life — cool coils.
4. Durability — all corrosion-resistant material.
5. Opening Pressure Differential — higher than most others on the market.

*See your local refrigeration wholesaler, or write us today for details*

JACKES-EVANS MANUFACTURING COMPANY CONTROLS DIVISION  
4427 GERALDINE AVE. • ST. LOUIS 15, MISSOURI



## Look at the record before you buy any defrost system

For eight years THERMOBANK has been the unquestioned standard for low temperature automatic defrosting. Significant improvements over the years have made THERMOBANK even better.

If you look at the record of thousands of successful installations, you, too, will join the leading refrigeration experts specifying Kramer THERMOBANK.

WRITE FOR BULLETIN R-124

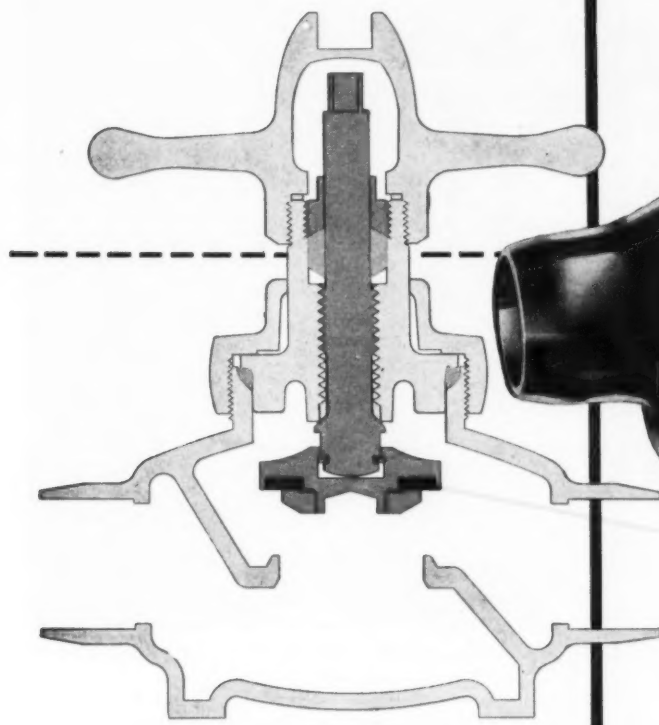
**KRAMER TRENTON CO. • Trenton 5, N.J.**

Circle No. 15 on Reader Service Card

FEBRUARY, 1953 • COMMERCIAL REFRIGERATION

# MUELLER BRASS CO.

## globe type line valves



**NYLON SEATING  
DISC ASSURES  
POSITIVE SHUT-OFF**



Mueller Brass Co. Globe type line valves, developed after long research and proved under the most severe operating conditions, are designed and built for quick, easy installation and long, satisfactory service.

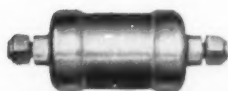
The superiority of the nylon stem disc has been proved in thousands of tests in both laboratory and field. It's resilient, tough, and can't be beat for refrigeration valve seating. This disc shuts off the flow perfectly and easily . . . even when foreign materials get lodged against it. The stem is the back-seating type . . . providing double seal protection.

A Neoprene "O" ring between the bonnet and the valve body provides a positive seal regardless of the range of temperatures and pressures. As the union collar is tightened, the ring is compressed until its shape in cross-section is triangular, which utilizes both the "O" ring and gasket principle to provide an effective and permanent seal.

The non-porous cast bronze body is polished to a high lustre that makes an attractive installation in any system.

*Write for our latest catalog describing the complete line of Mueller Brass Co. STREAMLINE products.*

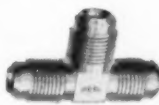
**DRIERS AND FILTERS**



**WROUGHT COPPER  
FITTINGS**



**FLARE FITTINGS**



**LIQUID INDICATORS**



**VALVES**



**MUELLER BRASS CO. PORT HURON 10, MICHIGAN**

Circle No. 16 on Reader Service Card

and AIR CONDITIONING • FEBRUARY, 1953

# VILTER COMPRESSORS equipped with ALLEN-BRADLEY TROUBLE FREE MOTOR CONTROLS



Vilter Compressors, equipped with Allen-Bradley motor controls, installed at Morris Harvey College, Charleston, W. Va.

Why are Allen-Bradley automatic starters so popular for refrigeration and air-conditioning service? . . . Because they are trouble free.

Why are they trouble free? Only ONE moving part. No pivots, pins, or bearings to corrode or stick . . . no jumpers to break. You install them . . . and forget them! No contact maintenance . . . Allen-

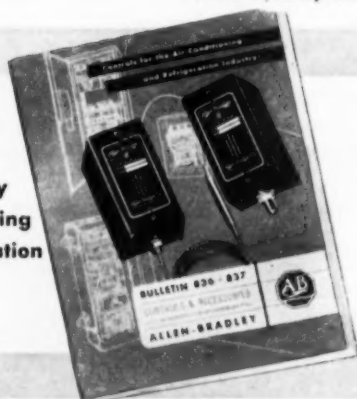
Bradley cadmium silver alloy contacts never need cleaning, filing, or dressing.

Dependable overload relays . . . Allen-Bradley thermal relays are accurate and always dependable . . . even after years and years of service.

The Allen-Bradley trademark stands for millions of trouble free operations. Specify Allen-Bradley controls, today.

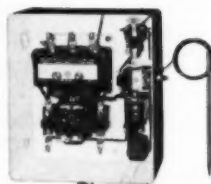
Allen-Bradley Co., 1340 S. Second St., Milwaukee 4, Wis.

**WRITE**  
for this  
Allen-Bradley  
Air Conditioning  
and Refrigeration  
Bulletin



**Specify Allen-Bradley Standard Controls. For "Engineered" Special Refrigeration Controls—Consult with Allen-Bradley.**

Allen-Bradley offers a wide line of air-conditioning and refrigeration controls—pressure and temperature controls, manual and automatic starters, and special refrigeration control units, consisting of various combinations of the above units.



A typical Allen-Bradley special refrigeration control unit. Note roomy enclosure.

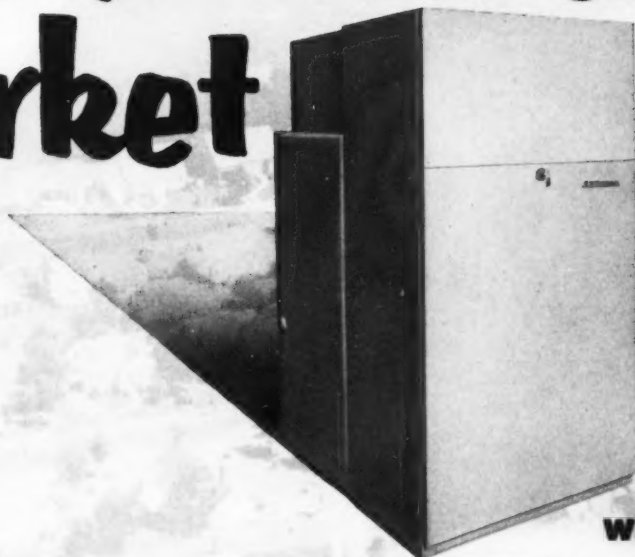
## ALLEN-BRADLEY QUALITY MOTOR CONTROLS

Circle No. 17 on Reader Service Card



**TYPHOON****HANDS YOU THE KEY TO A**

# new billion-dollar market



**MODEL S-W  
2-3-5  
TON  
SIZES**

## **WITH Cooling-Heating Units FOR THE HOME**

Take a quick survey today. How many new homes going up in your area? How many old homes already have warm air ducts? It adds up to a boom market for year-round air conditioning — and it's yours with Typhoon Model S-W!

### **43 YEARS OF COMFORT ENGINEERING IN THESE EXCLUSIVE TYPHOON FEATURES!**

**ONLY TYPHOON** has one-button control — summer or winter, a touch of a button brings cool air or warm ... automatically!

**ONLY TYPHOON** has an all-copper condenser—it defies rust and corrosion, gives trouble-free service.

**ONLY TYPHOON** is a miracle of compactness—takes up less space than any other unit, can even fit into a standard closet!

**ONLY TYPHOON** has completely automatic changeover design—for

switching from heating to cooling; no dampers to manipulate!

**SIMPLE TO INSTALL** — Just a few quick connections and within hours your Typhoon unit is ready to function.

**INEXPENSIVE TO OPERATE** — Engineered to the point of greatest economy consistent with dependable performance.

**QUIET** — Completely insulated heavy-gauge steel cabinet and floating spring base assure whisper-quiet operation.

**A.G.A. APPROVED.** Perfected, Tested and Factory-Guaranteed by Typhoon.

**Year-Round Air Conditioning  
With ONE CENTRAL UNIT  
Fully Automatic**

### **A TYPHOON S-W FRANCHISE**

is your key to this  
great new home market  
— write, wire, phone  
for information today.

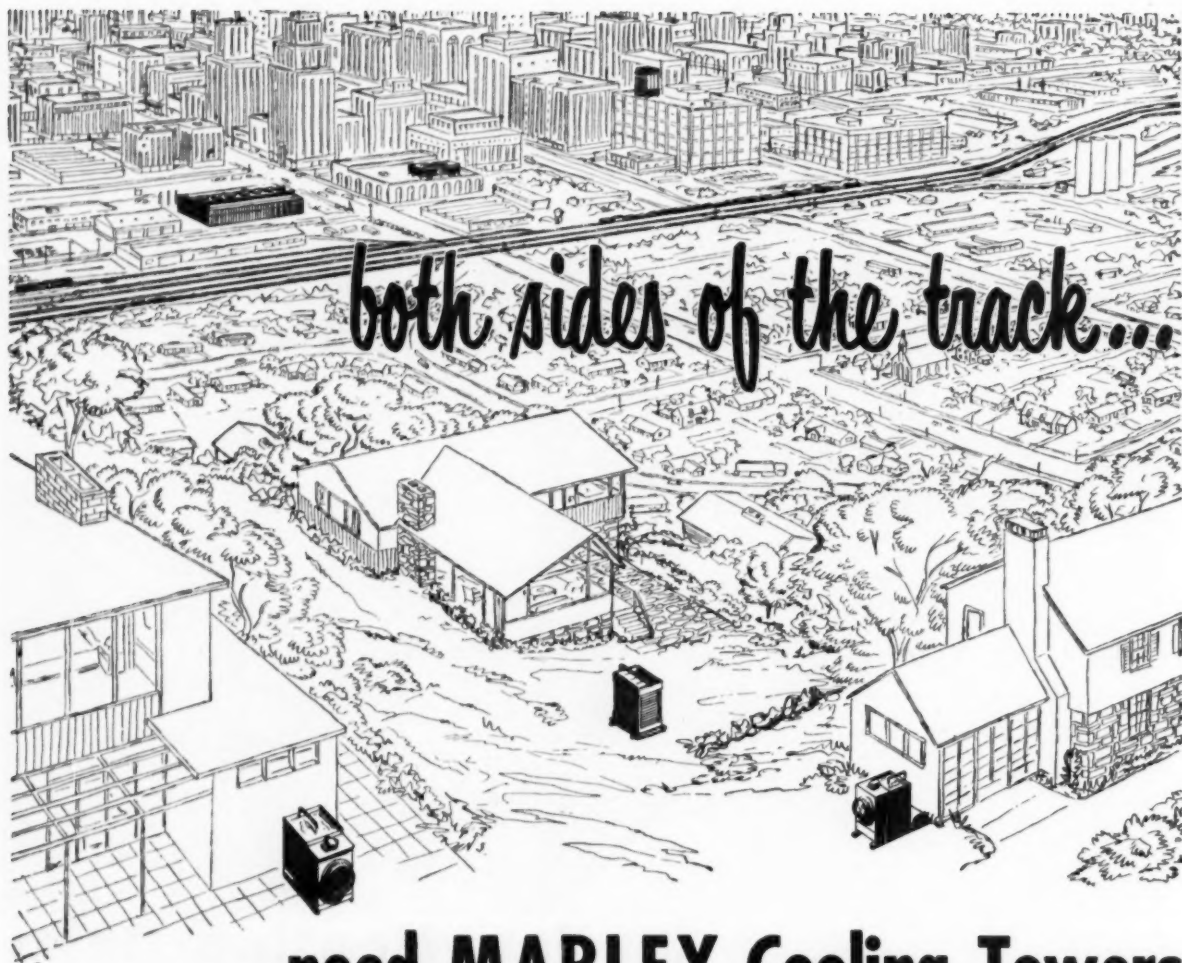
## **TYPHOON**

**AIR CONDITIONING CO. INC., 794 Union Street, Brooklyn 15, N. Y.**

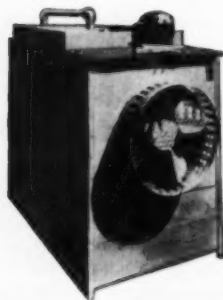
**Specialists in Air Conditioning Since 1909.**

Circle No. 18 on Reader Service Card

**and AIR CONDITIONING • FEBRUARY, 1953**



## ...need MARLEY Cooling Towers



Marley Aquatower, world's most popular mechanical draft cooling tower for residence air conditioning.

Everyone who sells or installs cooling towers is aware of the market for commercial and industrial towers and of Marley's dominance in the field.

Not so obvious but equally important is the rapid growth of a new market for Marley cooling towers over on the residential side of the tracks. Recent developments in home air conditioning have given this market a tremendous impetus. Thousands of Marley cooling towers have been installed in residential areas — and of greater interest to you are the multiplied thousands of Marley towers that will be installed in the coming season.

Now's the time to lay plans to capture your share of this sky-rocketing market. Make a survey of the potential in your city, and analyze the various small towers available. You'll find that "backyard business" has become *big* business — and that Marley offers the line that is most complete, easiest to sell and install, surest to satisfy your customers.



**The Marley Company**

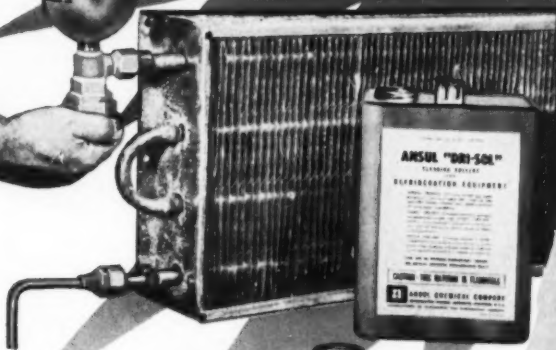
Kansas City 5, Missouri

Circle No. 19 on Reader Service Card

FEBRUARY, 1953 • COMMERCIAL REFRIGERATION



**FASTER, BETTER, EASIER  
CLEANING OF  
REFRIGERANT LINES AND COILS**  
*... at lower costs!*



WITH AN...  
**ANSUL  
DRI-SOL GUN**  
AND  
**ANSUL DRI-SOL  
CLEANING SOLVENT**

NOW . . . A break for the refrigeration service engineer. With an Ansul Dri-Sol Gun and Ansul Dri-Sol Solvent, you can clean refrigerant lines and coils **FASTER, BETTER, EASIER . . . and at lower costs.**

Here's all you do: 1. Attach the Dri-Sol Gun, filled with Dri-Sol Solvent, to the expansion valve inlet of the coil. 2. Pressurize the gun by pulling lever down (this releases CO<sub>2</sub> from the replaceable cartridge inside the gun). 3. Open discharge valve to release pressurized solvent into the coil.

The Ansul Dri-Sol Gun is designed specifically to force the cleaning solvent through refrigerant lines and coils under high pressure. It holds three pints of Solvent. It is equipped with a packless angle valve and a 3/8 in. male flare outlet for direct connection to the coil at the expansion valve inlet. Pressure is provided from a replaceable carbon dioxide cartridge inside the gun.

Ansul Dri-Sol Solvent dissolves wax, oil sludges, and decomposed refrigerant products. It has a great affinity for water and quickly dries any refrigeration circuit through which it is forced. It may be used more than once but with decreasing efficiency as it becomes saturated with foreign materials and moisture.



The Ansul Dri-Sol Gun is shipped complete with one replaceable pressure cartridge. Just fill with solvent and the gun is ready for use.



Ansul Dri-Sol Solvent is supplied in one gallon steel containers. It is safe to use. . . .



For more complete information on the Ansul Dri-Sol Gun and Dri-Sol Solvent ask your local Ansul Refrigeration Wholesaler. He'll be glad to give you all the details.

MANUFACTURERS OF REFRIGERANTS, REFRIGERATION PRODUCTS,  
DRY CHEMICAL FIRE EXTINGUISHERS, INDUSTRIAL CHEMICALS.  
—DISTRIBUTORS OF KINETIC "FREON" REFRIGERANTS



**ANSUL**  
*Chemical Company*

REFRIGERATION DIVISION • MARINETTE, WISCONSIN

Circle No. 20 on Reader Service Card  
and AIR CONDITIONING • FEBRUARY, 1953



## **KOLD-HOLD truck refrigeration WILL PAY FOR ITSELF!**

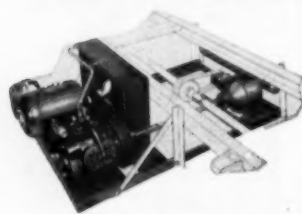
Every day is judgment day in your business. Your customer's judgment determines your success — or failure.

In striving for favorable judgments from your customers, natural color, full weight, garden flavor — these three factors make up the taste test that determine whether your products are preferred. Kold-Hold dependable truck refrigeration keeps you ahead of your competition, in delivering full flavor. Its low cost is cheap customer insurance.

For example, one user reports, "The truck has been our best advertisement we ever had. Our business has increased about 20% in 4 months."

In addition to the advantages in customer satisfaction you also eliminate spoilage losses, enable your trucks to make longer hauls with a full day's load and cut down handling time. With these benefits you can easily see why Kold-Hold truck refrigeration pays for itself.

### **KOLD-HOLD can answer any refrigeration problem!**



**KOLD-TRUX**

Which do you prefer . . . Mobile or Hold-Over truck refrigeration? Kold-Hold can give you either or a combination of both.

When your weather worries start, pick out the routes with the biggest refrigeration problems and call on Kold-Hold to give you a satisfactory solution. They will give you the right combination for your needs from such highsides as the Kold-Trux Mobile Unit, a mounted compressor, or make-and-break assemblies, coupled to such lowsides as Kold-Hold Hold-Over Plates, Thin Plates, Serpentine Quick-Action Plates, or Blowers.

Why not give us the details of your problems and let our engineers find the most efficient solution for you. Write today for details.



**HOLD-OVER PLATES**



*Tell us your truck refrigeration problems and send now for complete data and literature.*

## **KOLD-HOLD**

Circle No. 21 on Reader Service Card

**FEBRUARY, 1953 • COMMERCIAL REFRIGERATION**



If you are tired of trying  
to make a year's living  
in six hot weeks...



Here's what you've been waiting for...

If you are like us, you know a lot of good men in the air conditioning industry who are just plain fed up with this business of waiting for the weather to sell air conditioning — and then half-killing themselves trying to fill all the orders, make all the installations, and take care of emergency service calls at the same time.

It just doesn't seem right to try to crowd a year's business, and squeeze out a year's living, during the year's six hottest weeks.

You don't like it. We don't like it. Even the customers don't like it.

General Electric is doing something about it. We've had a lot of hard-headed business-minded people

working on the problem, and we think we have an answer you'll like.

G.E.'s 1953 selling program for packaged air conditioners is a honey.

- The special G-E customer incentive plan for 1953 gives you the means to sell early-season — and spread out your sales and installation load.

- The G-E planned financing we have for G-E dealers does everything for you but bank your profit!

- The new 1953 G-E product is terrific! Wait till you see it — you'll want to be selling *with* it — not against it.

- The national advertising and

the local promotion programs that work for you as a G-E dealer are the best in our history—and we think you'll agree that they give you a lot of leverage on stubborn, wait-a-bit prospects.

- The G-E name will work harder than ever for you this year—because every year it grows in prestige and public acclaim. You can't put a better name with yours to help you build your own position.

So—if you are a qualified refrigeration or air conditioning dealer and want to stretch your profit season — don't waste another minute. Call, wire, or write and ask us about opportunities with G.E. in your area.



## Packaged AIR CONDITIONERS

GENERAL  ELECTRIC

Circle No. 22 on Reader Service Card

and AIR CONDITIONING • FEBRUARY, 1953

General Electric Company, Section CR-1,  
Commercial Products Department,  
Air Conditioning Division, Bloomfield, New Jersey  
Please tell me more about my business opportunities for leadership with G-E Air Conditioning.

NAME .....

COMPANY .....

ADDRESS .....

CITY .....

ZONE .....

STATE .....



**REVERE**

**DRYSEAL**

**REFRIGERATION TUBE  
HAS A "FLARE" FOR  
NOT SPLITTING!**

It's not just a flare, it's practically a certainty that you can flare Dryseal for compression fittings without splitting. The secret is its special temper and its ductility.

And because it is dead-soft Dryseal can be bent with the hands with little effort. Along with its workability is the assurance that when you take Dryseal from the carton it will be as bone-dry and dirt-free as Revere's most modern manufacturing methods can make it. The last step in the manufacture of Dryseal is the double crimping of both ends of the tube, so that Dryseal is sure to come to you free from dirt and moisture. And the double crimp is made in such a way as not to change the diameter of the tube so that it can pass through any opening large enough for the tube itself.

And, for your greater convenience, Dryseal is packed in a nifty-50, one-coil carton. This carton has been attractively designed for easy identification in stock and contains one 50-foot coil of Dryseal Refrigeration Tube, making it easier to handle, light weight and economical. Carton is sturdily made to assure protection of the tube.

**IN THE EASY-TO-HANDLE  
NIFTY-FIFTY...ONE COIL CARTON**



**REVERE**

**COPPER AND BRASS INCORPORATED**

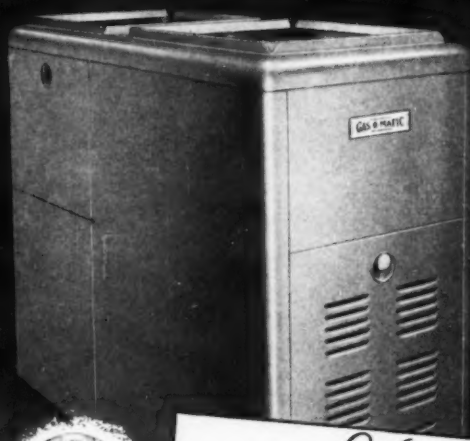
*Founded by Paul Revere in 1801*  
230 Park Avenue, New York 17, N. Y.

*Mills: Baltimore, Md.; Chicago and Clinton, Ill.; Detroit, Mich.;  
Los Angeles and Riverside, Calif.; New Bedford, Mass.; Rome, N. Y.—  
Sales Offices in Principal Cities, Distributors Everywhere*  
SEE REVERE'S "MEET THE PRESS" ON NBC TELEVISION EVERY SUNDAY

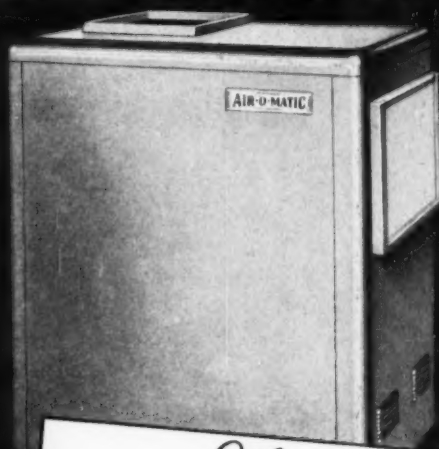
Now! Sell the easy way...

# TWO NEW MONEY-MAKERS

... members of  
a famous family!



**EUREKA Williams**  
**GAS-O-MATIC**  
*Automatic home heating*



**EUREKA Williams**  
**AIR-O-MATIC**  
*Automatic home cooling*

## 30 Years of Successful Home Heating

behind these outstanding products . . . many more years of  
successful selling ahead for selected distributors and dealers!

The past thirty years have brought healthy profits to Williams Oil-O-Matic dealers because the name Eureka Williams has an important meaning to the American homeowner. It stands for unexampled excellence in home heating. Today that same famous name gives its time-tested customer appeal to a full line of fine gas heating equipment and a superb new summer air conditioner...an outstanding opportunity for forward-looking dealers to sell complete, year 'round automatic home comfort.

Write today for  
detailed franchise information



Williams Division  
Eureka Williams Corporation  
Bloomington, Illinois

Please send complete, detailed information on the Eureka Williams  
Gas-O-Matic and Air-O-Matic Franchises.

NAME .....  
FIRM NAME .....  
ADDRESS .....  
CITY ..... STATE ..... CR-2

## A COMPLETE LINE OF HOME HEATING EQUIPMENT

Precision engineered for  
large or small homes. AGA-  
approved Gas Winter Air  
Conditioners, Gravity Fur-  
naces, and Conversion  
Burners.

## AUTOMATIC SUMMER AIR CONDITIONING FOR ALL HOMES

Two and three ton units for  
installation with forced air  
furnaces for complete home  
air conditioning.

Gas-O-Matic combined with Air-O-Matic  
for year 'round air conditioning



WILLIAMS DIVISION

**Eureka Williams**  
CORPORATION

Bloomington, Illinois

Better Products. Better Made... for better living!



**OIL-O-MATIC**  
Home Heating



**GAS-O-MATIC**  
Home Heating



**AIR-O-MATIC**  
Home Air Conditioning



**EUREKA**  
Vacuum Cleaners



**DISPOS-O-MATIC**  
Waste Food Disposer

Circle No. 24 on Reader Service Card

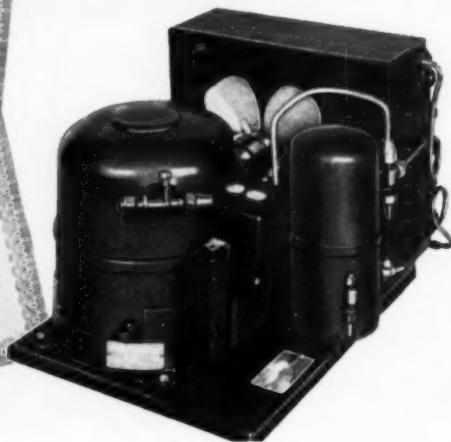
and AIR CONDITIONING • FEBRUARY, 1953

# SINCE 1949...



## Servel's Liberal Warranty Plan

has provided top protection assurance to both the buyer and seller of Supermetec Condensing Units



**S**ERVEL'S Five-Year Protection Plan, first introduced in 1949, continues to gain favor with the commercial refrigeration trade. Simplified and workable, it saves time, eliminates red tape when there's a need for a part replacement.

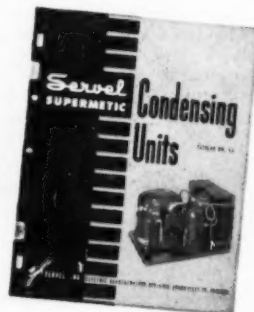
That's one reason why Servel users value the warranty "certificate" issued direct from the factory. More than printed words, it's genuine assurance of satisfactory performance for one of the most important periods in the life of the refrigeration unit.

More and more the experience of refrigeration men is proving Servel's interest in offering users the best and most liberal of factory-

backed protection plans. Should a renewal part be required, the serviceman doesn't need to wait for factory exchange approval. Steel case power units are warranted five full years . . . cast case sizes for one year. Servel Wholesale Suppliers are authorized to check inoperative parts and handle all Supermetec warranty transactions "over-the-counter." Servel's immediate replacement policy pleases customers, protects goodwill that results in repeat sales for the refrigeration dealer.

### For complete information

about Servel's low-cost, factory-backed Warranty and your copy of new Servel condensing unit catalog No. 53, ask your nearby Servel Authorized Wholesaler or write the factory today.



# Servel

**SERVEL, INC.**

ELECTRIC REFRIGERATION DIVISION  
DEPT. C-2 EVANSVILLE 20, INDIANA

THE NAME TO WATCH FOR GREAT ADVANCEMENTS IN REFRIGERATION AND AIR CONDITIONING

Circle No. 25 on Reader Service Card



memo

Do you need  
a good pump  
in a hurry  
?

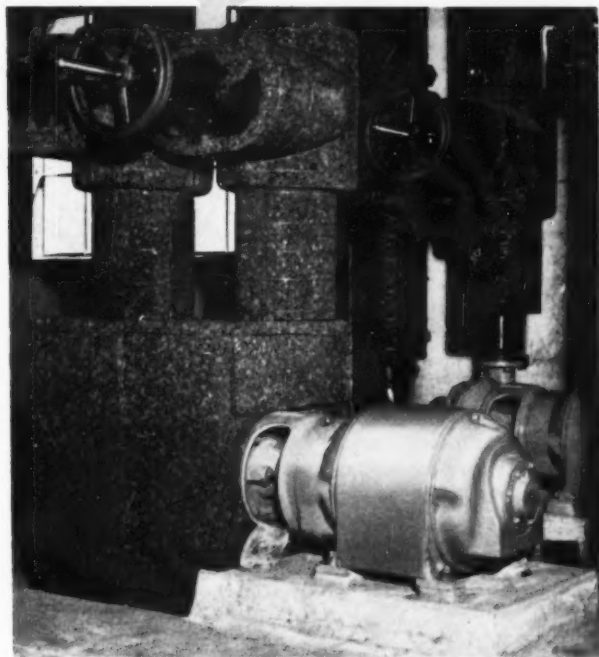


Here's the big news: These pumps are in plentiful supply . . . available for immediate delivery from stocks in the Ingersoll-Rand branch warehouses across the country. Just call your nearest Ingersoll-Rand representative.

Beside quick shipment, you save in other ways with I-R Motorpumps for air conditioning. Thousands of installations prove that you can often use a small Ingersoll-Rand centrifugal Motorpump to recirculate the same amount of cooling water as an ordinary pump of higher hp! This means you save on first cost every time you install an I-R Motorpump. You save also on space and weight.

What's more, the I-R Motorpump is easy to install . . . easy to bolt in any position to floor, wall or other equipment. No special foundation is needed. You can recommend and install I-R Motorpumps and be sure of customer satisfaction.

Drop us a note today for your copy of "A Picture of The I-R Motorpump Line for Air Conditioning," Form 7177. Ingersoll-Rand Company, 11 Broadway, New York 4, New York.



Two 15 hp model RV Motorpumps—part of a battery of 18 that circulate chilled water for cooling the Animation building of a large studio in California.

## MOTORPUMP

*...designed for Air Conditioning Service*

AVAILABLE NOW FOR RUSH DELIVERY

# Ingersoll-Rand

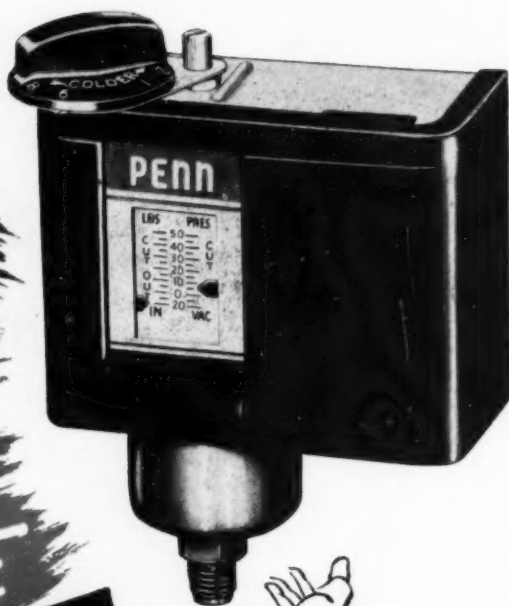
11 BROADWAY, NEW YORK 4, N. Y.

811.9

Circle No. 26 on Reader Service Card

**SNAPFLEX**  
CONTACT ACTION

makes **PENN**  
**FIRST CHOICE**  
among  
refrigeration  
men

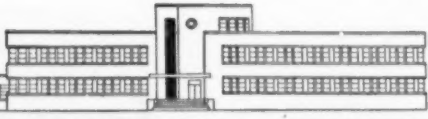


Recently introduced, the new PENN single-pole refrigeration control is winning the enthusiastic acclaim of refrigeration men everywhere. And, one of the *big* reasons is SNAPFLEX contact action!

Only PENN has this exclusive contact structure which provides "roll-wipe-snap" action on closing and opening. Result? No bounce... no closing arc... no welding of contacts. What does this mean

to you? Longer life and better performance than *any other* single pole control available!

Learn more about this new Series 270 *low-priced, single-pole control*. Ask your wholesaler or write **Penn Controls, Inc., Goshen, Indiana**. Export Division: 13 E. 40th Street, New York 16, N. Y., U. S. A. In Canada: Penn Controls Limited, Toronto, Ontario.

**PENN**   
**AUTOMATIC CONTROLS**

FOR HEATING, REFRIGERATION, AIR CONDITIONING, GAS APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES  
Circle No. 27 on Reader Service Card

**INDUSTRIAL AIR CONDITIONING** continues to make the headlines. Bausch & Lomb Optical Co. is using special equipment to control temperature and humidity for what is probably the most delicate machine tool in operation. The machine's job is to rule extra-fine lines of aluminum-coated glass for a "diffraction grating", a device of immense value in scientific research. When light hits the grating it breaks down into its component colors. The finer the grating the better the spectrum of colors and the more the scientists can tell about the nature of the light passing through. The new machine can rule 211,000 lines in a space of seven inches. This figures out to about 30,000 lines to the inch. Ninety such lines could be covered by a human hair. All of this calls for close control. The machine is in an air conditioned, underground chamber, and its work is so delicate that it can be upset by the slightest variation in electric power, or even the heat from a man's body.

**THE COIL VS. THE ATOM** is the caption of an item appearing in a recent issue of the Canadian Refrigeration Journal. "Among the people whose job it is to cope with and develop the usefulness of the atom," this item relates, "are an imaginative few who think that radiation will replace refrigeration as a means of preserving food. With that mighty source of energy at their palm they show a nose-thumbing lack of respect for the cooling coil, even predict its demise. We might point out, however, that air conditioning and refrigeration are used—indeed are indispensable—at Chalk River and Oak Ridge, the very birthplace of the atom! In fact, without them that mighty particle would be as helpless as a piece of toast. Even the atom must bow before the coil!"

**MORE THAN 250 TONS** of cooling capacity was saved in the air conditioning system which provides vital temperature and humidity control in the 9-acre plant of Lily-Tulip Cup Corp. at Springfield, Mo., through effective use of a roof spray system. Whereas normal summer temperature on the building's roof would run as high as 150 F, the sprinkler system automatically holds the roof temperature to 95 F. The result is a definite decrease in the operating costs of the air conditioning system and in roof maintenance costs, plus the added benefit of increased fire protection.

**THERE'S A NEW KIND** of potato on the market today. It comes peeled, ready to cook, and creates no dirt or garbage. And its biggest asset is the fact that it doesn't spoil after peeling, thanks in large part to the use of refrigeration equipment in an important part of the production process. After being peeled and scrubbed with a hot caustic solution, the potatoes move by conveyor into a large rotating drum, in which they are immersed for several minutes in a bath of a secret solution chilled to a specific low temperature. Continuous circulation of the treating solution over the cooler and then through the bath or tank assures proper cooling and uniformity of product. Restaurants that have used the "pre-peeled" spuds report that it has cut potato costs as much as 30%, and housewives are said to be equally pleased with its qualities.

**A NEW CONCEPT** of American home design as the result of year-round residential air conditioning has been forecast by Cloud Wampler, president of Carrier Corp. Packaged year-round conditioning units, he points out, can make it possible to wipe out old-fashioned barriers to the design of better homes at more reasonable prices. Homes built around such air conditioning units can be planned with far greater architectural freedom for more attractive living. Elimination of the need for such traditional features as cross ventilation screens and storm windows can result in definite economies to the buyer of the air conditioned home.



## HELP WANTED

ads bring prospect leads - and booming business - to a  
St. Louis air conditioning dealer

**D**EVELOPING air conditioning prospects from an unusual source—classified ads in the Help Wanted section of local newspapers—has helped Curran's, air conditioning and heating dealership in St. Louis, Mo., to hit an all-time sales record during 1952.

George W. Curran, president of the firm, which is located on busy Gravois avenue in the populous southwest section of the city, is a dealer with many years of merchandising experience behind him. Like most enterprising contractors, he realized two years ago that it would "take more than the average amount of effort" to provide wanted business expansion.

Consequently, he has explored a

number of devious and unusual routes to sales, with varying success. In addition to an imposing showroom, with all glass front, active displays of air conditioning and heating equipment, and a long-established reputation, Curran's is a heavy user of newspaper advertising, direct mail, radio spot advertising, and other forms of promotion.

By far the most unusual and effective of Curran's merchandising methods, however, has been the tiny classified ad which appears every day in the "Help Wanted" section of a leading St. Louis newspaper.

Responsible for selling an outstanding volume of package units and central air conditioning systems, this classified ad is a sharp contrast

to the usual display advertisement, occupying only 1 column by  $\frac{3}{4}$  of an inch of space.

At first glance there is nothing conspicuous about it, other than the fact that it does not offer employment as all of the surrounding ads in the section definitely do. Instead, it is designed to appeal to those who are in need of extra income, and, as Curran puts it, "No-body is more likely to be interested in additional income sources than the person who is already reading the Help Wanted columns in search of a position, or a better job than the one already held."

Each of the Curran Co.'s tiny ads is designed to attract forward-looking, enterprising men and women



who are thoroughly familiar with events in their own neighborhoods, and thus able to secure prospects for air conditioning, heating or other services offered by the firm. All ads are headed "Information Wanted . . . . . We will pay well for the names of prospects to whom we can sell heating or cooling equipment or major appliances. You get the name; we'll do the rest".

### Response Is Outstanding

Response during the two years that this simple program has been in effect has been outstanding, Curran reports. There are at least half a dozen responses daily, and often many times that number, as a result of the fact that most of St. Louis' 800,000 population is at least partially "exposed" to the Help Wanted column at some time or another.

Every housewife who telephones in to ask for additional information is given an enthusiastic welcome, and told that Curran's has set up a sliding scale of cash awards, based on the unit sales price of all equipment sold by the store. Each is invited to visit the showroom, whenever it is convenient, for a more elaborate explanation of the details.

### Payment Is Prompt

Many of them do pay such a visit, particularly after the first sale has been made to one of the prospects they have turned in.

A wise student of psychology, Mr. Curran co-operates closely with every such "bird dog" who is in search of prospects, and sees to it that all are well rewarded. As a result, he swiftly builds up a reservoir of practical loyalty which has supplied a steady stream of prospects.

Every prospect turned in is followed up within the next 48 hours if at all possible, either by a well-trained outside salesman, or at least via the telephone. As soon as a sale is closed, and installation under way, the person who "bird dogged" the prospect for the store is contacted, and a check mailed. Curran's is as prompt in this circumstance as in making the installation, inasmuch as

*Continued on page 81*



**EXPLOSION DAMAGE** like this, brought about when a spark set off gas from volatiles stored in the laboratory refrigerator, accents the need to...

## Safeguard Laboratory Refrigeration Units

**T**HE development of mechanical refrigeration has been a real boon to the chemist confronted with the problem of overnight or weekend storage of volatiles left over from runs, or parts of the analyses themselves.

However, while the application of the larger sizes of domestic refrigerators and home freezers to such laboratory uses has provided many benefits, it also introduces a new element of potential hazard if proper safeguards against explosion are not taken.

Harried researchers, working under steadily increasing pressure, have found this mechanical refrigeration equipment to be a valuable ally, because of the insurance of proper temperature which it provides and the convenience which it offers in comparison with the methods of ice storage previously used.

On the other hand, though, the ever recurring explosions in chemical laboratories point up a situation that is becoming increasingly dangerous as chemical industries expand enormously.

Such explosions can wreak considerable havoc with property as well as endanger employees. There have been many cases in which hinges and door locks have been sheared off and the door itself blown clear of the cabinet to cause considerable damage. Sometimes flying debris has broken glass containers in the laboratory, thus releasing other volatiles in quantity. In some instances, expensive laboratory apparatus, built after much detailed experimentation, has been damaged beyond all repair.

Fundamentally, the problem comes about when unsealed containers are used and left in storage for extended periods, allowing the gas to accumulate. This gas then can be ignited when a temperature control "makes" to cause the magnetic relay to close. Or, assuming that the temperature is at a maximum and the magnetic switch opens

*Continued on page 81*

## Forced Circulation? ... Gravity?

*Either method can be used for effectively ...*

# CLEANING COILS INTERNALLY

**S**UBSTANCES that tend to collect on and foul the internal surfaces of extended surface heat transfer equipment can be divided into four basic groups.

First, and most important, is the scale that forms when heat precipitates calcium, magnesium, and similar salts out of steam, hot water and condensate piping.

Second, and less frequently found is slime formed by algae and similar plant and bacteriological growths that may be contained in water or formed on internal surfaces.

Third, and seldom encountered, is oil which occurs most frequently in coils using exhaust steam.

Fourth, occasionally coils are used with extremely dirty water. In such cases, the tubes of the coil can be clogged with foreign matter.

For such applications a coil with larger tubes and removable headers is usually provided, and in addition a strainer should be provided ahead of the coil. Headers can be removed without disconnecting the piping and cleaning can sometimes be accomplished by rodding at regular intervals. A high pressure stream of water may also help.

Scale occurs most frequently in those areas where the natural water supply is excessively hard. The hardness is usually caused by mineral salts in solution. When heated,

they will either precipitate out or, in rare instances, unite with the hydrogen molecules in the water to form acids that may or may not corrode the metals of the heat transfer surface.

This corrosion must be carefully watched and controlled, for if it gets out of hand it may so badly

***T**HIS article is the first of two to be presented by Commercial Refrigeration and Air Conditioning on the subject of cleaning extended surface coils used in both cooling and heating applications. This first article is devoted to the internal cleaning of coils; the second article will tell how to clean coils externally. Material for both articles has been made available by The Trane Co.*

damage the coil that an acid action descalant used in cleaning may remove all of the corroded metal of a tube or U-bend, causing pin-point leaks or even complete destruction of the base metal.

If scale is allowed to accumulate, heat transfer of the coil will be retarded materially. Should excess amounts collect, the tubes can become completely clogged.

Obviously, the best way to keep the internal surface clear of scale is

to prevent its formation. This can be done by effective water treatment. No general recommendations on water treatment can be made since conditions vary from area to area. It is best to obtain the services of a qualified water treatment engineer to make the recommendations for your area.

Should scale form, two general methods can be used for its removal—mechanical and chemical.

Where the internal surfaces of the tubes are accessible, the mechanical method of rodding may remove the scale. Generally, however, the scale is so firmly formed that rodding will fail to do the job properly. There is always a possibility of damage to the tube surfaces.

When rodding fails, or the tubes of the coil are not accessible, the chemical method, employing an acid acting descalant, must be used. In fact, it must be emphasized that the chemical method is the best in that it is more thorough and safer. And, descaling chemically can be done without removing the coil.

It must be remembered that the age of the coil and the kind of metal it is made of are factors that enter into any cleaning operation. An old coil may conceivably "fall apart" under the action of cleaning agents.

It is impossible for most of us to have a chemist's knowledge of the many kinds of acids and compounds

of acids available for cleaning. Unfortunately, they do not all react similarly or with equal speed. Not only are there countless compounds which will attack scale, there are countless compounds which will attack the metals of the coil.

An expert will be able to tell you what compound will solve your problems. For instance, if coil tubes or headers are made of metals other than copper, the manufacturer's representative should be relied on for advice.

### Use Inhibiting Agent

Action of the descalant on most scale deposits can be very rapid. Therefore an inhibiting agent must be used to control the descalant. Titration with a test kit furnished by the manufacturer of the descalant will indicate when the charge has removed all of the scale.

When employing an acid acting descalant, the following method is one that may be used effectively (see Fig. 1):

Block or shut off the supply and return lines of the coil. It is usually good practice to provide manual shut-off valves in the original installation when an unfavorable water condition exists. Vent the top opening according to the diagram so gases which will accumulate in the coil can escape.

### Pump Through Coil

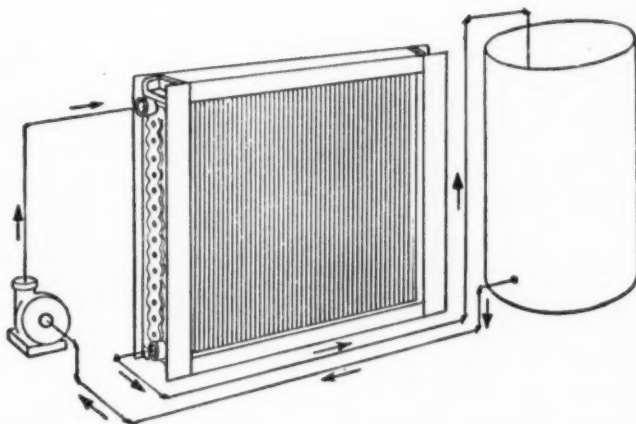
Using a one-inch centrifugal pump and a large wooden barrel or a large crock, connect the discharge side of the pump to the bottom connection of the coil and connect the top connection to the open barrel or crock. Connect the suction side of the pump to the bottom of the barrel or crock. In the barrel, use an acid action descalant with a concentration of 15 to 20%.

When the connections are all complete, operate the pump long enough to dissolve the scale. This hook-up is shown in Fig. 1 as a piping set-up for coils with the same end connections. Use opposite end connections for opposite end coils.

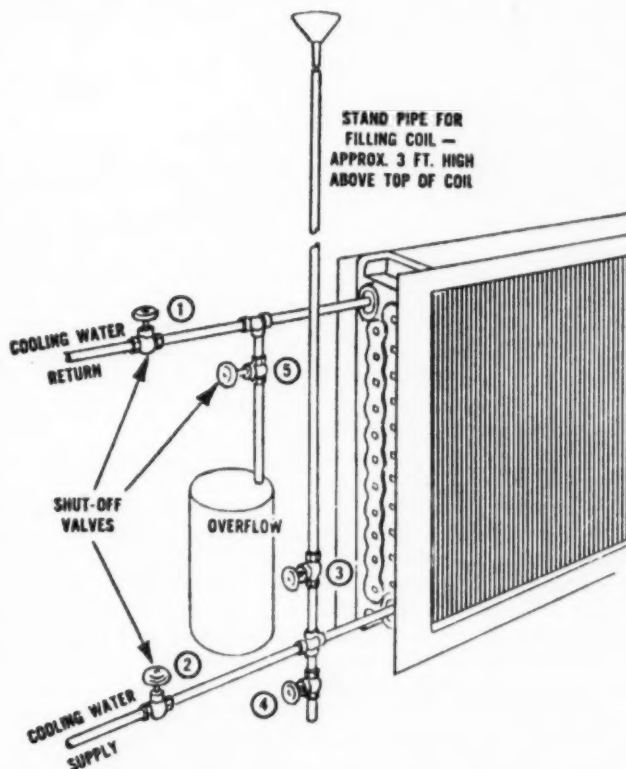
When full removal is accomplished, turn off the pump, drain the charge from the system, and re-

*Continued on page 78*

## Two Ways To Clean a Coil



**FIG. 1:** Here is one method of cleaning coils while they are still in place. The diagram shows the flow of cleaning solution through the pump and coil.



**FIG. 2:** This hook-up may be used when cleaning coils by gravity. To use, disconnect coil supply and return lines and drain coil through valve 4, first closing valves 2, 5, and 3, and opening valve 1. Then close valves 1, 2, and 4, open valves 5 and 3, and fill coil slowly through funnel at top of standpipe until cleaning agent trickles out of overflow.

## **PROBLEM:**

**To do a 250-ton cooling job  
with 125 tons of equipment**

## **SOLUTION:**

**Provision for "switchover" control  
so that one system can do two jobs**

# **DOUBLE-DUTY COOLING**

**A**N effective "switch over" control has made it possible for the 125-ton air conditioning system installed in the huge Dauphin Way Baptist Church, Mobile, Ala., to provide double-duty service and, in effect, to do the job of a system twice as large.

This \$100,000 system, ample to meet any cooling load requirements which might be imposed upon the church building, was designed by J. M. Hastie, head of Air Conditioning Engineers, Inc., of Mobile, and installed by his firm.

Due to its membership of 5500 parishioners, the Dauphin Way church is in use far more often than the average ecclesiastical edifice but, as with other churches, there are long periods of time in which no comfort cooling is required, because the building is not occupied.

After studying the problem carefully, Hastie came up with a plan which actually comprises two separate air conditioning systems, one for the "auditorium" area or church proper, and one for the Sunday School or classroom area. Each system is capable of operating independently, but both are supplied with

chilled water from the same refrigerating plant.

To power this flexible arrangement, two 50-ton Carrier condensing units and one 25-ton Carrier unit were installed in the basement of the church. This equipment employs city water for compressor cooling. A large evaporative condenser was mounted on the roof.

### **Valve "Zones" System**

Operated in stages, the compressors chill city water in a huge tank mounted midway in the building. This chilled water then is circulated to eight separate fan stations, four of which are located on each side of the building. These fans have a total air output of more than 50,000 cfm. Each fan station contains one bank of finned coils, a heating coil, thermostat, individual blower, and air filters.

Simply by turning a valve, the church custodian can concentrate the full 125-ton system upon either the class room or auditorium sections of the building, according to the need.

For example, on week days when

the classrooms are being utilized for Bible school sessions but the auditorium or main seating area is seldom in use, the entire cooling capacity is devoted to this part of the church.

On evenings when special services are to be held, weddings conducted, or the auditorium is otherwise to be used, the entire supply of chilled water from the refrigerating system is switched over to the fan stations in the auditorium section, and the temperature is quickly pulled down to the desired degree.

On Sundays or other days when all parts of the church are active, both sections are maintained at a comfortable temperature merely by switching from one to the other as the need occurs.

The church management has the option of either complete thermostatic control or manual operation, but the latter is used extensively due to the constantly changing use of various parts of the building.

After this equipment was installed, the church officials "sold" the system to the congregation by fully explaining it in one of the church's weekly bulletins.



# This refrigerated case sells for you!

We're showing your customers why they're better off buying cases equipped with *Thermopane*<sup>®</sup> insulating glass. Show them that *your* cases have it. Want some reprints of the ad pictured here? How many? Drop us a line at Libbey-Owens-Ford Glass Company, 2923 Nicholas Building, Toledo 3, Ohio.

®

**How to be sure the glass in a refrigerated case is sealed from dirt and moisture**

Only Thermopane<sup>®</sup> insulating glass has the famous *Bondmaster* Seal<sup>®</sup> which prevents moisture and dirt from getting between the panes. This seal is metal-to-glass... no organic material that can deteriorate or leak.

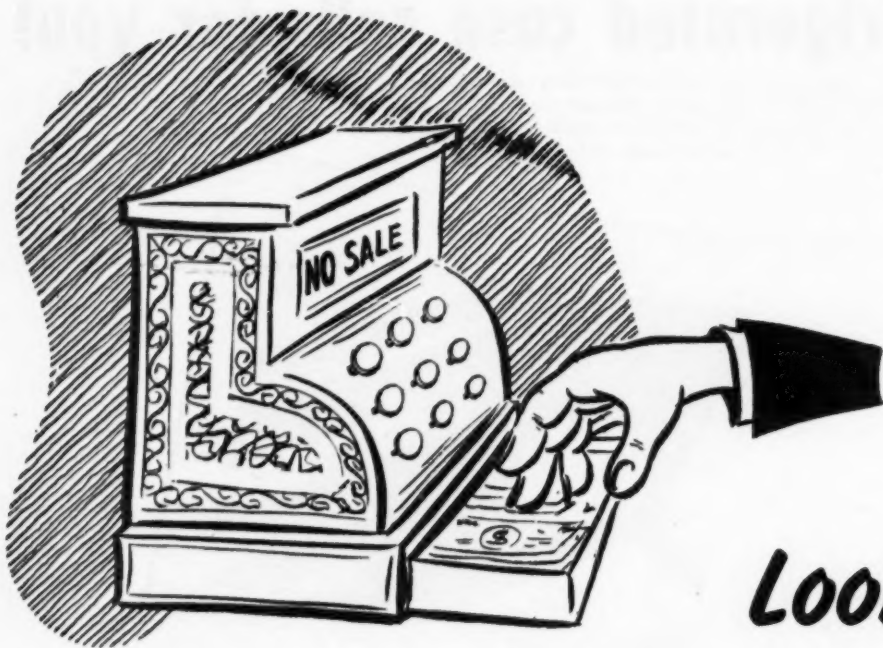
To make sure the test case you buy has a Thermopane seal, look for the Thermopane name imprinted on the seal between the panes. You'll find it on all the better refrigerated cases.

**LIBBEY-OWENS-FORD GLASS COMPANY**  
2413 NICHOLAS BUILDING  
TOLEDO 3, OHIO

**Thermopane**  
INSULATING GLASS  
LOOK FOR THE NAME ON THE SEAL BETWEEN THE PANEES

*Your customers are reading this ad in:*

Food Topics . . . . . January 19  
Quick Frozen Foods . . . February  
Meat Merchandising . . . February  
Ice Cream Review . . . . February



**Look Out-**

**for that hand in the till - it may be yours!**

## Are You Robbing Your Own Business?

**T**HERE'S a deplorable tendency on the part of many refrigeration contractors to draw net earnings out of a business as fast as made, without any regard whatever for future earnings prospects. While in all other respects a contractor may manage his business soundly, he errs seriously if he succumbs to this "feast or famine" philosophy in respect to his personal drawing account.

At best, if he falls into this fallacy, his personal drawings fluctuate sharply from month to month as net earnings rise or fall. At worst—and this is more apt to be the case—his personal withdrawals every month of the year are geared to the net earnings of the best months.

That is, his personal needs get out of hand and are predicated on maximum withdrawals every month, regardless of the poor earnings of slack months.

When this occurs, a contractor is drawing on his cash reserves to maintain excessive personal needs, or he is depleting his inventory or standing off his creditors,—or doing all three. In any event, these excessive personal withdrawals not in line with net earnings can lead to bankruptcy. Many a contractor has gone right up to the brink of failure before he became aware of what was happening to his business—and why.

Weekly or monthly personal withdrawals from a refrigeration busi-

ness should be determined upon the basis of average weekly or monthly net earnings. This average is related to the annual net earnings.

Thus, despite the fact that a shop is at the moment earning enough to permit \$2,000 a month for the owner's personal account, such withdrawals are not warranted if the prospects indicate that the annual net earnings will not exceed \$18,000.

Yet, surprisingly enough, a substantial number of contractors jump up their personal needs the moment they hit a high earning period. Frequently, a real hardship is incurred in cutting back to a lower drawing account later, particularly if long-range personal

commitments have been made, such as acquisition of an expensive car on time payments or a new home with heavy amortization charges.

The only safe course for a contractor to follow is to realistically budget his personal drawing account so that the total amount drawn in a year will not exceed the year's probable net earnings. Pessimism is warranted in estimating such earnings. And weekly or monthly drawings in total should preferably be well under the year's estimated net earnings, to allow for a margin of safety.

In failing to budget his personal

drawings, a contractor creates personal problems which plague him and add to his business worries. In addition, in attempting to solve his personal financial worries, he brings into effect a whole new string of business problems with which he should not be burdened.

Sound management dictates that considerably less than total net earnings be ear-marked for the owner's personal needs. If the business is growing, some net earnings should be plowed back into the business, and particularly during an inflationary period with rising values all along the line.

In connection with budgeting a personal drawing account in line with actual or closely estimated net earnings, it cannot be too strongly emphasized that ownership has last claim on the business for personal needs and not, as some erroneously conclude, first claim.

Under no circumstances does anything in excess of net earnings belong to ownership for its personal needs—not if the business is to remain solvent and creditors are to be kept satisfied.

There are several ways in which a personal drawing account can be

*Continued on page 80*

## Want to save money? Check YOUR TAX I. Q.

Try this test for . . . YOUR TAX I. Q.

**C**OME the Ides of March—comes also federal income tax time. Do you know your federal taxes—what they can do to you—what you can do to them? Try this three-minute tax quiz. (Editor's note: three minutes if you're an expert.) It is based on material furnished by the American Institute of Accountants, the national professional society of certified public accountants. **Answers are on page 55.**

1. *Your son worked for you in the business last summer, and you paid him a total of \$591. He also won \$10 in an advertising slogan contest. You can—*

- a. Take a full \$600 dependency exemption for him.
- b. Take a half exemption.
- c. Take no exemption.

2. *While on vacation with your wife last summer, you entertained several men you do business with. Is this—*

- a. Deductible as a business expense?
- b. Not deductible, since you were vacationing?
- c. Deductible only if you and your wife file a joint return?

3. *You made a non-business loan of \$2,000 to a friend last March, and he promptly disappeared, leaving absolutely no trace. You can probably—*

- a. Deduct the full amount as a bad debt on your 1952 return.
- b. Deduct only half of it.
- c. Take no deduction at all.

4. *You earned more than \$3,600 in your business. The social security tax is—*

- a. Not levied on your own income.
- b. \$81, paid with your income tax return.
- c. \$54, paid to the Social Security Board.
- d. \$54, paid with your income tax return.

5. *Which of the following contributions is not deductible?*

- a. Your local Community Chest.
- b. The American Legion.
- c. A political party.
- d. The YMCA.

6. *You failed to take all your allowable deductions on your 1950 return. You can—*

- a. No longer file a claim for a refund.
- b. File a refund claim as late as 1954.
- c. Stop worrying, since you will get a refund automatically.

7. *Your wife works for you in your business. She—*

- a. Is required to pay social security.
- b. Is not subject to social security.
- c. Can choose whether she does or does not want social security coverage.

8. *In December, you spent \$1,000 for built-in bookshelves and wall-to-wall carpeting for your office, on which your lease has three years to run. You can—*

- a. Deduct the \$1,000 on your 1952 return.
- b. Amortize the cost over the next three years.
- c. Depreciate it over the life of the furnishings.

9. *There are a few leaks in the shingle roof of your office building, so you construct a new tile roof. Tax-wise, the cost is—*

- a. Deductible as a repair.
- b. Deductible in the current year as an improvement.
- c. Depreciable—a portion deductible each year of its useful life.

10. *In determining your taxable income, which of the following taxes you pay is not allowed as a deduction?*

- a. Real estate tax.
- b. State income tax.
- c. State inheritance tax.
- d. Motor vehicle license fee.

# THE HEATING OF AIR CONDITIONING SIDE

By Wm. Henry Knowlton

## How To Figure Pressure Drop In Radiant Heating Plants

**I**N the design of any hot water heating system, including radiant panel systems, it is necessary to understand "pressure drop" which is caused by friction between the moving liquid and the inside of the pipes used.

While we have attempted, in these articles, to present only the most simplified methods of heating design, it becomes necessary to explore the theory of pressure drop in the system before we can intelligently calculate the gallons of water per minute required or select a booster pump. And it is particularly important that we understand the terminology employed for various units of measure.

### Pressure Drop Defined

Reduced to its simplest terms, pressure drop is the amount of pressure lost between any two points in a system. Liquid (usually water) moving through the system encounters resistance in passing through pipes, heating units, valves, ells, tanks, and so on. If, for example, water enters an indirect tankless type heater at 40 lbs. pressure and comes out the other side at 35 lbs. pressure, we know there has been a pressure drop of 5 lbs. through the heater.

It is a matter of physical law that the moment flow starts in a pipe,

friction is set up, which increases in direct proportion to the velocity of the flow. Air conditioning engineers, accustomed to calculating the "resistance" created by air flowing through ducts, should easily understand that the same situation exists in a system using liquids instead of air.

In actual practice, pressure drop may be considered to vary as to the squares of the velocities of the liquids flowing in the system. One of the standard manuals on the subject, (B & G Handbook, published by Bell & Gossett Co.) states that to calculate the effect of changing velocity on pressure drop, this simple rule may be followed:

Divide the final velocity by the initial velocity and square the result. Then multiply the original pressure drop by the above result, which gives the new pressure drop. The following example shows the effect of an increased velocity —

$$\frac{6 \text{ ft. per second final velocity}}{3 \text{ ft. per second initial velocity}} = 2$$
$$2 \text{ squared} = 4$$
$$10 \text{ lbs. initial pressure drop} \times 4 =$$
$$40 \text{ lbs. final pressure drop.}$$

Gallons of water may be substituted for feet per second in the above formula.

It becomes apparent in the design of any hot water heating system, including radiant systems, that pres-

sure drop must be taken into consideration. Further, power must be available to offset the effects of pressure drop, if the system is to operate as desired. In radiant systems a pump is used to overcome the total pressure drop created by various components of the system.

Resistance created by various restrictions in the system, such as ells, valves, radiators, unit heaters, blast coils, and so on, are calculated in units known as "elbow equivalents" (see Table 1).

### Figuring Elbow Data

While tables of "elbow equivalents" will be found in the catalogs and literature of various manufacturers, these are calculated as follows:

A 90° elbow creates an amount of friction equal to a pipe of the same diameter with a length twenty-five times the diameter of the elbow. Thus a 1/2-in. elbow is equal in resistance to 12 1/2 inches of 1/2-in. pipe—or approximately 1 foot. Thus the "equivalents" set up in Table 1 are expressed in feet.

While the "elbow equivalents" expressed above are calculated in feet, manufacturers who publish pressure drop information on their equipment may express the data in pounds per square inch, or in mil-inches, as well as in feet. These



units of measure are interchangeable, as follows:

1 lb. per sq. in. equals  
2.3 ft. of water

or

1 ft. of water equals .43 lbs. per  
sq. in. or 12,000 milinches.

The word "milinch" means 1/1000 of an inch or 1/12000 of a foot. It follows that 12,000 milinches equals "one foot of water" or the pressure exerted by a column of water one foot high.

Many practicing professional engineers do not like the term "milinch" and prefer to work in fractions of "feet of water". Yet as one engineer said just recently, "we're stuck with the milinch — we might as well use it."

#### Milinch Is Useful

The unit of measure "milinch" is valuable to the contractor, however, because the pressure drop through the piping of a heating system is usually very low. If "feet of water" were used, then the necessary calculations would have to be made in fractions of a foot, always awkward to handle mathematically. Because the milinch can be computed in fairly large whole numbers, (like the Btu fractions are eliminated and calculations become more rapid.

The term "head pressure", which is used in designating the capacity of a circulating pump, is simply an-

other way of saying, "pressure drop". The maximum "head" of a pump, usually expressed in feet of water (or milinches) is the maximum pressure drop against which a pump can induce a flow of liquid.

Head pressure should not be confused with "static pressure" which is created by the weight of water in the system, as they have no re-

#### AS WE SEE '53 . . .

Herbert L. Laube, president,  
Remington Corp.:

"In our field, which is room air conditioners only, 1953 will be the largest year in the 80-year history of our company, and the largest in the 20-year history of room air conditioners for the entire industry."

lationship. Because the weight of water or static pressure will always be equal on both sides of the pump, this pressure does not have to be taken into consideration in pump selection. Pump capacity is limited only by friction, or pressure drop, in the pipes.

Figure 1 shows a typical booster or circulating pump capacity curve. At the top of the curve there is "no delivery" of water, as the power of the pump is exactly equal to the "head" or pressure drop opposed to it. There must be a drop in pressure from this point, before water can flow.

When some of the friction in the system is eliminated, the pressure drop goes down, and the pump starts to operate. For example, at 6 ft. of head pressure, the pump delivers about 52 gallons of water per minute, and at 4 ft. of head pressure the pump is turning out 60 gallons per minute.

#### Beware of "Short Cuts"

Because pressure drop is affected by the size of pipe used in a radiant heating system, and by the length of various pipes, it is an all important consideration for the designer. Often the system layout must be modified by reducing the length of serpentine coils or constructing combination coils and grids, to keep pump capacities (and horsepower consumed in kwh) within practical limits.

Many engineers and contractors designing radiant heating systems have their own "short cuts" for the calculation of gpm required and pump capacity necessary for a given system. These should not be attempted, however, until the designer has a thorough understanding of "pressure drop" and is able to calculate it by the "long method" outlined here.

Next month we will discuss the calculation of gpm needed in a typical system, together with the methods of pump selection.

## Pressure Drop Factors

TABLE 1

Table of Elbow Equivalents

1 90° Ell	1
1 45° Ell	0.7
1 90° Long Turn Ell	0.5
1 Open Return Bend	1
1 Open Gate Valve	0.5
1 Open Globe Valve	12
1 Flow Control Valve	20
1 Stop Cock Open	1
1 Boiler	3
1 Tee	
25% Water to Branch	16
33% Water to Branch	9
50% Water to Branch	4
100% Water to Branch	1.8

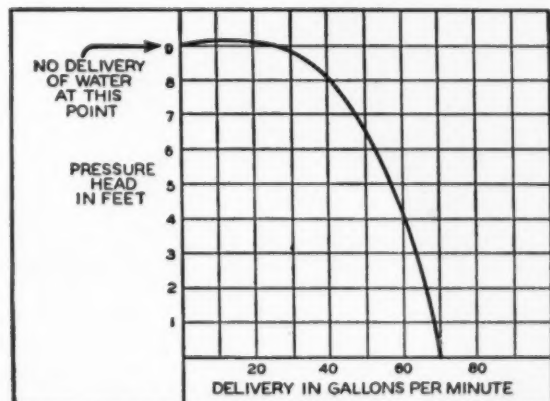


FIGURE 1 — Head pressure chart for typical circulating pump, showing delivery.



*-Coolants  
can't get out!*

## WHEN YOU USE CHASE® COPPER REFRIGERATION SERVICE TUBE

For refrigeration lines, you can't beat the combination of Chase Extra Soft Copper Refrigeration Service Tube and Chase Solder-Joint Fittings. They form pressure tight and leak-proof soldered connections. Chase Wrought Copper Fittings are non-porous . . . even Freon can't get through.

Because Chase Tube is *Extra Soft*, it can be easily bent and flared. It comes to you clean, bright, dry and oxide-free with sealed ends to keep out moisture, dirt and air.

Send for **FREE** Chase booklet giving suggestions for uncoiling, cutting, reaming, burring, flaring and other information on Chase Extra Soft Copper Refrigerator Service Tube.

**Chase**  **BRASS & COPPER**

WATERS-JRY 20, CONNECTICUT • SUBSIDIARY OF KENNECOTT COPPER CORPORATION

• The Nation's Headquarters for Brass & Copper

Albany†	Cleveland	Kansas City, Mo.	New York	San Francisco
Atlanta	Dallas	Los Angeles	Philadelphia	Seattle
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Boston	Detroit	Mississippi	Providence	
Chicago	Houston†	Newark	Rochester†	(Sales office only)
Cincinnati	Indianapolis	New Orleans	St. Louis	

Circle No. 28 on Reader Service Card

**FEBRUARY, 1953 • COMMERCIAL REFRIGERATION**

# about PEOPLE

**J. F. Knoff** has been named vice president and general sales manager of the Airtemp Div. of Chrysler Corp. Knoff joined Chrysler Airtemp in 1945 as a district representative in the division's New Orleans region. He became regional manager there and later was transferred to Dayton as southern divisional manager in 1947. In 1948 Knoff was named sales director of the firm. He was advanced to assistant general sales manager in 1950 and in 1951 he was promoted to general sales manager. Before joining Airtemp he was with the Ford Motor Co. and Delta Ship Building Co.

Four new appointments in Kelvinator's advertising department have been announced. **J. T. Stone** has been named advertising and sales promotion manager for refrigeration products, **W. L. Hullseik** has been appointed



advertising and sales promotion manager for range and cabinet products, **J. H. Mattern** is the new advertising and sales manager for the Leonard Div., and **M. R. Milner** is now sales promotion manager for the firm. Stone, a veteran of the company, has been sales promotion manager since 1949. Hullseik was advertising manager for Leonard before being named to his present post. Mattern served as field representative for Leonard before his present appointment. Mil-

ner had 10 years in the printing and advertising fields before joining the company. **H. A. Willis** remains as national advertising manager; **L. J. Gage** stays on as manager of commercial advertising; and **L. H. Shultz** remains cooperative advertising manager.

**David B. Zipser** and **Fred L. A. Schmidt** have been appointed to new positions at Tenney Engineering, Inc. Zipser has been appointed Chief engineer of the firm's



D. B. Zipser



F. L. A. Schmidt

refrigerator division and Schmidt has been appointed senior engineer in the environmental test chamber division. Zipser will be in charge of research, design, and production of unit coolers, coils, expansion valves, ice makers and defrosting devices. Before joining the company, Zipser was research engineer and later chief engineer for Bush Mfg. Co. Schmidt's primary duties will be connected with application and sales engineering. His background includes 19 years with General Electric and 4 years as a refrigeration consultant in eastern United States.

**R. Randall Irwin** has been appointed manager of personnel and industrial relations for the Brown Instruments Div. of Minneapolis-Honeywell Regulator Co. in Philadelphia.

**Frank A. Mitchell** has been named general appliance sales manager of Servel, Inc. He comes to Servel from Fedders-Quigan Co., where he was sales manager of the refrigeration appliance division.

**Chester A. Barbeck** has been named product promotion manager



for self-contained air conditioning units by Carrier Corp. During the past four years he has served as the firm's merchandising manager for the Dallas district, specializing in these air conditioning units. Before joining Carrier, Barbeck was with Servel, Inc. and Chrysler Airtemp.

**Willard M. Brown**, formerly manager of the Washington, D. C., office of Chase Brass & Copper Co., Inc., has been appointed manager of the Philadelphia district.

**L. O. Bower** has assumed additional duties at Sherer-Gillett Co. which will carry with them the title of assistant to the president, in addition to that of vice president which



L. O. Bower



J. S. Twist

he now holds. In his new capacity, Bower will take over much of the administrative and planning work formerly handled by **J. H. Ccolidge**, president. Bower joined the company in 1943, became sales manager in 1944 and vice president in 1947. He has been a director since 1949. Named general sales manager of Sherer-Gillett was **John S. Twist**,

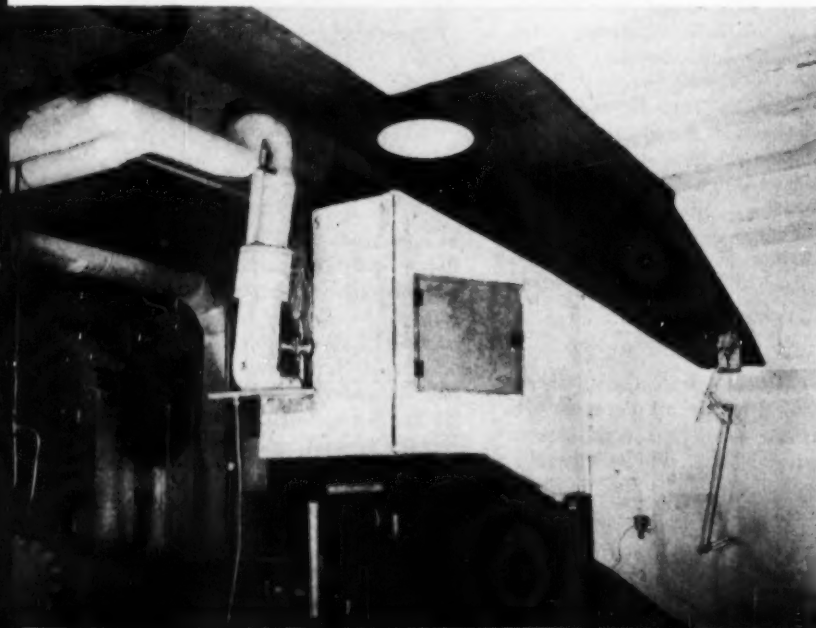
*Continued on page 74*



**TEMPERATURE CONTROL** in this bank air conditioning installation was complicated by the mezzanine arrangement shown in the rear. Consequently, one thermostat was installed on the main floor near the stairway leading to the mezzanine, and another was located on the mezzanine itself. These controls are set to maintain a constant temperature of 75 F.

## A Year - Round System You

**YEAR-AROUND CONDITIONING** is provided by the direct-fired gas heater mounted directly below the cooling coil in such a way that common ductwork can be utilized. Actually, the heater, cooling coil, fan, air mixing chamber and discharge chamber are combined into a single complete unit, with the refrigerating condensing unit assembly mounted along side.



**L**OWER initial cost and the prospect of less maintenance, as compared with a steam system, dictated the selection of a direct-fired gas heater for inclusion in the system which provides year-around comfort conditioning for the new Warren Village branch of Ohio Savings & Loan Co., Cleveland.

Designed to make banking transactions as pleasant as possible, for both customers and employees, the air conditioning system is set to maintain a constant temperature of 75 F throughout the year, with plenty of fresh air being circulated at all times.

The system was installed at a cost of approximately \$30,000, including heater, cooling equipment, cooling tower, fan, controls, ductwork, piping, wiring, and other essentials. Riester & Thesmacher Co. installed the heating and cooling units, and

**COMMERCIAL REFRIGERATION**



## **This bank's \$30,000 air conditioning investment pays dividends in customer and employee comfort**

Slawson Equipment Co. provided the controls. Both are Cleveland firms.

A 40-hp Westinghouse semi-hermetic condensing unit and a 500,000-Btu-per-hour Dravo "Counterflo" heater combine to form the heart of this system.

The heater was installed in a horizontal position in the basement,

gpm pump requiring 3.6 brake horsepower, and is equipped with 66 spray nozzles. This tower permits re-use of cooling water, reducing water consumption by about 90%.

A constant volume of air, heated or cooled as required, is circulated in the building through concealed ductwork, discharging from attractive ceiling diffusers. Two thermo-

Each of the two room thermostats controls a pair of interlocked dampers serving the ductwork for its part of the building. If warm air is required, the hot air damper at the heater is opened, and that from the cooling coil closed by the same amount. If cool air is required, this action is reversed.

Two additional thermostats are located in the plenum chamber to maintain the required temperature of air there. One thermostat, used in winter, keeps the temperature in the chamber at 82 F. The other, used in summer, maintains the temperature in the chamber at 62 F.

To achieve the desired temperature, the proportion of return air to fresh air is increased or decreased, but this is never allowed to exceed 3 to 1. Reuse of a portion of the return air reduces the cost of heating air in winter and of cooling it in summer.

As air enters the system through the cooling coil, the dampers controlling this air energize a relay which starts the refrigerating machinery.

Fresh air is drawn into the system through an 11 x 50-in. goose-neck intake on the roof of the building, with a screened opening 4 ft. above the roof. Exhaust from the heater is carried up through the roof by means of a vent stack.

The building contains a total of 95,264 cu. ft., with an estimated heat loss of approximately 500,000 Btu per hour. Yet from Oct. 3, 1951 to May 13, 1952, when outside temperatures sometimes dropped as low as 9 F, the building was maintained at a uniform 75 F at a total fuel cost of only \$417.89, indicating the effectiveness of this type of system.

## **Can Bank On**

with the air conditioning cooling coil mounted above it. These combined units together occupy a space only 7 ft. long, 8½ ft. wide, and 6½ ft. high. The heater, cooling coil, fan, air mixing chamber, and discharge chamber are combined into one complete unit.

The refrigeration compressor is mounted on top of the condenser, and this whole assembly is mounted on the floor in front of the heater-coil assembly.

The heater itself is of standard design, except that the usual blower was omitted and a separately driven exhaust fan provided.

The direct expansion cooling coil consists of four rows with 27 tubes in each row.

The cooling tower is equipped with two fans and is capable of handling 15,000 cu. ft. of air per minute. This unit has a 5-hp, 150-

stats, one near the stairway to the mezzanine and the other on the mezzanine itself, are set to maintain the desired temperature.

Return air from the building is mixed with fresh air in a plenum chamber adjoining the heating and cooling equipment. A fan powered by a 7½-hp motor forces the air mixture through either the heater or the cooling coil, depending upon whether the system is on summer or winter cycle.

Two automatic dampers are arranged in the main discharge lead from the duct of the heater, one serving the ductwork for the front of the building, and the other serving that for the rear. They are interlocked with two similar dampers that serve the cooling units.

Ceiling diffusers have dampers that permit volume control through the bottom of the grill.

**"I get a sounder job  
and a better profit  
with Nibco Fittings  
from Tubes!"**



"NIBCO fittings match copper tubes and that means more to me than just a better looking job. It means that they take solder just like the tube does. And the way they're made, the solder cup is bound to fit the tube just right every time. You get fewer test leaks. These fittings are light, strong and heat up fast.

"In the NIBCO line you have the right fitting for every part of the job. You save plenty of bushings. Every time I figure a job and give the order to my jobber I find several places where one NIBCO fitting takes the place of three! In my book this all adds up to a faster installation and a bigger profit for me plus a sounder job for my customer. Get NIBCO fittings from your jobber. Give them a trial and I'll bet you'll say, too, NIBCO fittings from tubes are better."



**NORTHERN INDIANA BRASS CO.  
214 PLUM STREET, ELKHART, INDIANA**

Circle No. 29 on Reader Service Card

# NEWS OF THE INDUSTRY

## DEERING EXPANDS PRODUCTION, SALES PROGRAM FOR 1953

The Deering Air Conditioning Co., Cincinnati, has acquired the former Sterling Cut Glass Co. building on top of Mt. Adams at 1306 Celestial St. The building contains approximately 40,000 sq. ft. of manufacturing, assembling and storage space on two levels, and about 1500 sq. ft. of wood-paneled, air conditioned offices.

Building alterations just completed will insure production of up to 300 air conditioning units per day, the company said, involving the employment of a number of additional workers.

Deering manufactures room air conditioners designed for easy installation in steel and aluminum casement windows. The new design, invented by Deering, is covered by U.S. Patent 2,610,483, with additional U.S. and foreign patents pending.

Deering's national sales convention, held in Cincinnati in December, was attended by representatives and distributors from the company's 13 sales districts. In addition to an expanded trade advertising schedule, a \$110,000 cooperative newspaper advertising program is planned for 1953.

Besides merchandising air conditioning units under its own name, Deering also will manufacture units this year for Burnham Corp., Irvington, N.Y., and AlSCO, Inc., Akron, Ohio, under private labels.

Burnham, a manufacturer of heating equipment, will distribute air conditioners through its established heating distributors and dealers; AlSCO, a leader in the storm door and window industry,

## NEXT CONFERENCE SET FOR SEATTLE

The 11th Educational Exhibit and Conference, last one preceding the All-Industry Refrigeration and Air Conditioning Exposition in Cleveland next November, will be held at Seattle, Wash., on April 24, 25 and 26, REMA headquarters reports.

will market the units through its own branches in Ohio and through its franchised outlets nationally.

Deering Air Conditioning Co. was organized in February, 1952 by Tom Deering and Cliff Huesgen, both residents of Cincinnati, and achieved national distribution during its initial year in the business.

## ROOM UNIT SALES SET AT 412,000

Shipments of window and console type air conditioning units during 1952 totaled 341,000 units with a manufacturers sales value of \$66,180,000, according to an estimate released recently by Air Conditioning and Refrigerating Machinery Association.

This compared with 237,490 units, with a manufacturers' sales value of \$45,824,000, for 1951.

ACRMA estimates that shipments of window-type air conditioners last year totaled approximately 330,770 units, with a manufacturers' value of \$61,755,000, as against 228,964 units valued at \$42,442,000 in 1951. Shipments of console-type air conditioners in 1952 were estimated at 10,230 units, valued at \$4,425,000, compared with 8,526 units, valued at \$3,382,000, in 1951.

The estimates for 1952 include shipments by all manufacturers, both ACRMA-member companies and non-members, ACRMA said. The figures for 1951 are manufacturers' shipments as reported to the Bureau of the Census, Department of Commerce.

Based on a comparison of manufacturer and distributor inventories at the beginning of 1952 and inventories near the close of the year, 412,000 room air conditioning units are estimated to have moved into dealer hands during the year. The 412,000 unit figure is believed by ACRMA to at least approximate the actual sales of room air conditioners to users during 1952. Dealer stocks at the end of the year are known to be substantially less than in January, 1952, but actual figures are not available, ACRMA said.

## REWA NAMES HULL AS EXECUTIVE SEC'Y

Appointment of A. Starr Hull of Columbus, Ohio, as executive secretary, is announced by Benjamin V. Blazer, president of Refrigeration Equipment Whole-



A. Starr Hull

salers Association. The appointment was effective Jan. 1, 1953.

Prior to his association with REWA, Hull was director of sales for the Deshler Wallick Hotel in Columbus. Preceding this he was convention manager of the Columbus Convention Bureau for three years.

Hull attended the University of Notre Dame and has had trade association and business management courses in the College of Commerce, Ohio State University. He is a graduate of National Institute of Northwestern University in trade association management.

## FOREMOST ADDS NEW PLANT FACILITIES

Foremost Fountains, Inc., has recently set up a new factory adjacent to its main plant in the Bronx. The new plant adds more than 10,000 additional square feet of manufacturing facilities.



New plant of Deering Air Conditioning Corp.

## INDUSTRY LOOKS TO GOOD YEAR IN '53

All indications point to a banner year in 1953 for the refrigeration and air conditioning industry, according to information from the Refrigeration Equipment Manufacturers Association.

John E. Dube, president of REMA, said, "We expect 1953 to be a good year for the refrigeration and air conditioning industry. Any reasonable decline of general business should be offset by the growth factor of our industry. This is particularly true with the advent of all-year-round air conditioning of homes."

The year, 1952, has seen an average increase of approximately 30% in the business of manufacturers over 1951 and it is estimated that 1953 will increase another 30% over 1952.

Residential air conditioning, both in the form of room coolers and air conditioning which is combined with the heating equipment, has shown rapid expansion during the past year. Over 20 new manufacturers are entering the field of room air conditioners for 1953.

Forecasts of the 1953 sales outlook by leaders in various branches of the refrigeration and air conditioning industry appear in boldface boxes scattered throughout this issue.

## BALTIMORE AIRCOIL SELLS FAN DIV.

Baltimore Aircoil Co., Inc., manufacturers of evaporative condensers and cooling towers, announces the sale of its fan division, the Baltimore Fan Co., to the Universal Industrial Propeller Co. of Stamford, Conn. This organization will handle the manufacture and sales of industrial propellers formerly manufactured by the Baltimore Fan Co.

## NEW SALES AGENCY FOR EVERFROST

In order to better serve its national distributors, Anderson & Wagner, Inc., has announced the formation of

Everfrost Sales, Inc. The new sales organization will operate under the direction of Mark G. Anderson as president, with Don D. Hilke as vice president in charge of sales. Everfrost Sales, Inc., will handle the sales of all products manufactured by Anderson & Wagner, Inc., which includes a complete line of soda fountain and luncheonette equipment, Everfrost Soda Bars and drink dispensers.

## REMINGTON TO MAKE RCA CONSOLE UNITS

Remington Air Conditioning division of Remington Corp. has contracted to supply RCA-Victor with the console type single room air conditioners which the latter will market under its own brand-name in 1953, Herbert L. Laube, Remington president, has announced.

The two models for RCA of 1 hp and 1½ hp for operation on 230 volt AC circuits will be supplied from new facilities being put into operation by Remington at its Auburn plant.

## SEE PRE-FAB HOMES AS ALL-YEAR MARKET

New, low-cost, year-round air conditioning units have made prefabricated homes with complete, built-in air conditioning a definite 1953 possibility, the Prefabricated Home Manufacturers Institute was told recently by William A. Lake, residential air conditioning promotion manager for Carrier Corp. The company's new single-package home unit means year-round air conditioning in such homes at an added cost of only \$600 to \$800, Lake said.

Complete air conditioning was described as the newest sales tool for selling homes in quantity. Within the last few months, Lake said, smart prefabricated home manufacturers have been swinging to the conviction that they must provide year-round conditioning for their new lines of home models.

## SERVEL NAMES ARIZONA OUTLETS

Servel, Inc. has appointed distributors in Phoenix and Tucson to handle its air conditioning equipment in Arizona's 14 counties. The Standard Sheet Metal Works with offices in Phoenix will have the franchise for Apache, Maricopa, Pinal, Cochise, Mohave, Yavapai, Gila, Navajo and Yuma counties. Peter Henshied and Floyd Collins are partners in the business and Joseph Flanagan is the service manager. Hearn Plumbing and Heating, Inc., Tucson, has the franchise for Cochise, Pima, Graham, Santa Cruz, and Greenlee counties. W. P. Hearn is president, R. E. Hearn, vice president, and Dale Thompson, sales manager.

## FREEZ-RITE NAMES CORBIN & PLATZ

Corbin & Platz Sales Agency, of Kansas City, has been named to handle the west central territory for Bailey & Perkins Co.'s Freez-Rite Div. The agency will handle the division's line of frozen foods, dairy and ice cream refrigerated display cabinets. C. E. Corbin and L. A. Platz, principals of the agency, were former Viking Refrigerator sales executives.

## BRANCH REPLACES POCOCK IN PHILA.

A branch of the Frigidaire Sales Corp. will replace J. J. Pocock Inc. as distributor for all Frigidaire products in the Philadelphia district. H. J. Heller, who has been with Pocock since 1923 and is now vice president in charge of sales, will become manager of the new branch. The Philadelphia sales district covers the eastern half of Pennsylvania and southern part of New Jersey. Headquarters of the branch will be located in the building now occupied by the Pocock company in Philadelphia. The change follows the death recently of J. J. Pocock, a pioneer distributor for Frigidaire.

## E. H. SEELERT DIES; McQUAY EXECUTIVE

Edward H. Seelert, one of the original founders of McQuay, Inc., died Jan. 1 of a heart attack. Born in Germany in 1892, he came to Minneapolis in 1910 and after service with Witte Mfg. Co. and McQuay Radiator Corp., with the latter as plant manager, was a founder of McQuay, Inc. in 1932. At the time of his death he was vice president, secretary-treasurer and a director of the company.

He was also a director and treasurer of the American Automatic Ice Machine Co., Faribault, Minn., a subsidiary of McQuay, which he helped to form in 1949.

## AIR CONDITIONING "SELLS" N. Y. HOMES

Ernest J. Calcagni and Edwin Bayer, Westchester County (N.Y.) builders, sold nearly 50 per cent of the first section of 125 houses in their Saxon Woods Park development before a formal announcement was released to the press or an ad was run. The reason for this, according to Calcagni, is that word got around that the \$14,250-\$16,500 houses were to be air conditioned. Ted Skoglund, of York Westchester Corp., who sold these builders on air conditioning their development with 1-hp hermetic units, believes that within the next five years the new, non air conditioned house will be obsolete.

## USAIR NAMES 2 DEALERS IN OHIO

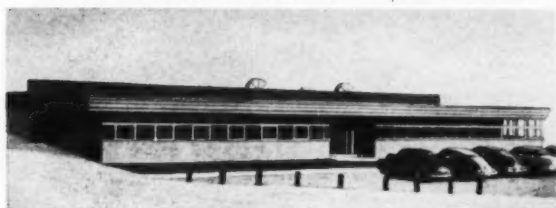
United States Air Conditioning Corp. announces the appointment of two new distributors in southern Ohio for its packaged air conditioning equipment.

The Treaty Co., of Greenville, Ohio, is expanding its facilities into the air conditioning field as distributors of window type room air conditioners, upright store type conditioners and home air conditioners.

The Hesco Corp., of Cincinnati, will distribute store type and home conditioners.



## DELAYAN HEADQUARTERS IN NEW PLANT



DELAYAN MFG. CO. of Des Moines, Iowa, has announced the moving of its headquarters into its new plant at Grand Ave. and Fourth St., West Des Moines. Delavan manufactures a complete line of replacement parts for commercial refrigerator compressors as well as supplying nozzles and accessories for manufacturers in the oil burner, industrial, aircraft and agricultural fields. The new West Des Moines plant, completed in November, provides more than twice as much area as the firm's Des Moines plant, and provides room for future expansion. This is the third plant expansion for Delavan since its formation as a division of Delavan Engineering Co.

## HIRONS TO MANAGE 2 PLANTS FOR BOHN

The appointment of A. J. Hirons as manager of the Bohn Aluminum & Brass Corp.'s Plant 24 at Adrian, Mich., has been announced by S. D. DenUyl, president of that company.

This is the huge aluminum forging and extrusion plant which Bohn built and operated for the United States Government during World War II and which they are presently operating under lease from the U.S. Air Force.

Hirons, who has been with the company for over 23 years in several management jobs, will continue as manager of the Bohn Plant 13 at Adrian which manufacturers refrigeration evaporators, heat exchange units and aluminum extrusions.

## FEDDERS MEN SEE RESTYLED '53 LINE

A completely redesigned and restyled line of room air conditioners with automatic controls was introduced to key distributors by Fedders-Quigan Corp. at a national sales meeting in New Orleans recently.

Emphasizing the immediate need for room air conditioning in more than 40 million homes, Salvatore Giordano, Fedders' president, said that the industry will not be able to meet the consumer demand despite major production in-

creases in 1953. He cited as limiting factors the unavailability of some basic materials and essential manufactured components.

"While cooling and dehumidification will remain the primary function of room air conditioning for some years to come," he said, "manufacturers will continue engineering and testing room air conditioners toward the ultimate goal of perfecting units which will provide low cost cooling and heating conveniences in all climates.

"This is the first step toward the ultimate development of an automatic temperature controlled air conditioner which eventually may make obsolete furnace methods of heating."

New models featuring automatic "weather bureau" controls in 1/3-ton, 1/2-ton, 3/4-ton standard, 3/4-ton deluxe and 1-ton capacity window models were introduced. The 1-ton model is in addition to the window line. Consoles in 3/4-ton, 1-ton and 1 1/2-ton will be available next year.

## NEW SALES AGENTS

Appointment of three new sales agents has recently been announced by Universal Diffuser Corp., New York City. The Aires Co. will cover the Philadelphia area, Harris Sales the Pittsburgh trading area, and Lydick-Barmann Co. the Fort Worth territory.



World's smallest air conditioner, yet packed with more capacity per horsepower

AVAILABLE IN 1/3 - 1/2 & 1 HP MODELS

## Deering Does It Again!

### FIRST TO BUILD A ROOM AIR CONDITIONER TO FIT ALL STEEL AND ALUMINUM CASEMENT WINDOWS

Now we built another air conditioner that can be installed in just one window opening as small as 10 1/4" high and 14 1/2" wide. Consumer demands by those owning casement windows had to be met for an air conditioner that would eliminate costly window modifications. Here it is! And so easy to install, in less than 30 minutes by either service man or customer. It requires no special framing, window brackets or wing adapters — no installation kit needed. Just slide-in . . . hook-in and plug-in, as simple as that. No window mullions and muntins altered, mutilated or destroyed, no drilling, cutting or filing.

**THERE IS NOT A WINDOW MADE (CASEMENT OR DOUBLE HUNG) THAT THE DEERING WILL NOT FIT.**

Think of the increased sales this will mean for you, no matter what line you are now carrying. You can have a truly complete room air conditioner line that will mean more sales and more customers.

**The Deering AIR CONDITIONING CO.**  
CINCINNATI 2, OHIO

**ACT NOW!**

PROFIT IN 1953 FROM A BRAND NEW DIMENSION IN ROOM AIR CONDITIONING

**Yes!** I am interested in a franchise for the DEERING casement window room air conditioner. Please rush me full information.

Name

Company

Position

City  Zone  State

**MAIL TODAY TO**

**THE DEERING AIR CONDITIONING COMPANY**  
1069 CELESTIAL AVENUE • CINCINNATI 2, OHIO

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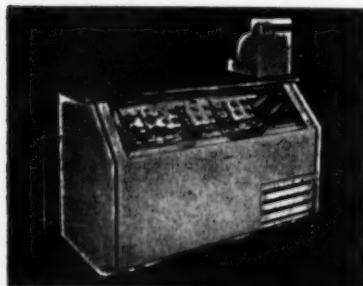


# There's a Reason

## MORE DEALERS ARE SWITCHING TO FOGEL

*In fact--there are many reasons!*

- **A COMPLETE LINE—SELL EVERY PROSPECT**  
You can meet every need of every prospect without hop-scotching from line to line.
- **EXCLUSIVE MODELS THAT ARE "DOOR OPENERS"**  
Designed for space-cramped neighborhood stores where competitive models can't fit. Eliminates "cut-throat" competition. Fastest profit-making food merchandisers on the market.
- **PROTECTED TERRITORY**  
The Fogel franchise protects the sales efforts and prospects of the dealer who does a reasonable selling job. No purchase commitments required.
- **COMPETITIVE PRICES—GENEROUS DISCOUNTS**  
Competitive prices and generous discounts help you close more sales at bigger profits.

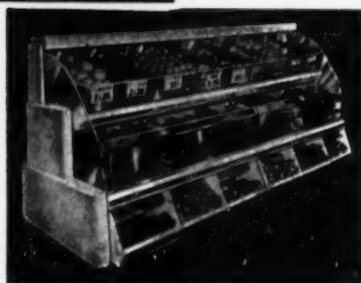


**"ANGLE VISION"  
COUNTER TOP  
FREEZER**

Most versatile sales builder and space saver ever designed. Can be placed in space-cramped stores where no other freezer could fit.

### "VEGMART"

Three-deck combination produce case with refrigerated middle deck for produce, fruit display on top deck, potato-onion bins below. Brings superette service to the neighborhood store.



*Get the Facts... Get the Profits*

FOR COMPLETE INFORMATION WRITE, WIRE, PHONE

## FOGEL REFRIGERATOR CO.

5406-R EADOM ST.

PHILADELPHIA 37, PA.

Circle No. 33 on Reader Service Card

### WIN MISSOURI TUBE BENDING CONTEST



Ira Melton, (second from left) Paplar Bluff, Ark., took top honors in a tube bending contest held by Southeast Missouri Chapter of RSES in Cape Girardeau recently. Second place went to Wilbur ("Bud") Ervin (right) and third place to Joe W. Harvey (second from right), both of Cape Girardeau. The meeting was sponsored by Imperial Brass Mfg. Co. In addition to the contest, Imperial's educational sound slide film—"Bull Jack and the Breeze", covering tube working and showing the latest developments in cutting, flaring and bending of tubing, was shown. Ben F. Allen of Allen's Refrigeration Service, Cape Girardeau, president of the chapter, presided at the meeting which also featured a talk by Milton Copeland (left), Imperial representative.

### WIS. RSES WILL MEET IN APRIL

April 24, 25, and 26, 1953, are the dates set for the Wisconsin State RSES 8th annual convention as announced by Walter Kohlmann, Milwaukee, Wisconsin Association president.

The La Crosse chapter will be host to the coming event. Wm. Trapp, vice president of La Crosse Cooler Co. and charter member of the La Crosse RSES, has been selected as general chairman of the convention.

Several committee meetings have been held and a well-rounded educational program, spiced with unusual entertainment features, has been formulated.

Assisting Trapp as sub-committee chairmen are William Schomburg, Emmet Flick, Harold Sargent, Charles Fiedler and Fred Reiman, all of LaCrosse, and Frank Wehrer of Sparta.

\$12,000 price range, it was announced jointly by Gen. John J. O'Brien, president of Gunnison Homes, Inc., U. S. Steel's housing subsidiary, and Cloud Wampler, president of Carrier Corp.

These two companies have signed a contract under which Carrier will provide combination cooling and heating units to Gunnison Homes as optional equipment in all of its models to be produced and marketed in 1953.

In entering into this contract with Carrier, Gunnison Homes becomes the first of the nation's prefabricated home manufacturers to provide year-round air conditioning for its home purchasers. The company next year will offer the cooling and heating units in any of its models through its nation-models.

### WAGNER APPOINTS KEMPER BOSTON MGR.

Wagner Electric Corp. has announced the appointment of John T. Kemper as manager of the Boston Electrical Div. office, succeeding M. E. Comstock, who is retiring after nearly 34 years' service to the company.

### PRE-FAB HOMES TO BE AIR CONDITIONED

For the first time, year-round air conditioning is to be made generally available in homes in the \$7,000 to

# CONTRACTORS

NEWS • ACTIVITIES • PLANS

## Air Conditioning Now "Respectable," But Perfection Is a Long Way Off

*A condensation of an address presented by Ralph Lee, Trane Co., at the 7th Annual convention of RACCA, Dec. 3-5, in Miami Beach, Fla. This address has been divided into two sections, the second part of which will be presented on these pages next month.*

AIR conditioning in the proper sense is not just cooling or dehumidification. Heating and humidification are equally important to a true air conditioning system. What we are really talking about, then, is air conditioning or the art of climate control for human comfort.

It is true that the cooling phase of this business is the newest, the most rapidly growing and foremost in the attention of the public. It has only been in the past few years that the idea of summer cooling and dehumidification has passed from the luxury category to that of necessity. In most areas the question of summer cooling in public buildings, theaters, restaurants, stores, shops and the like is academic. It must be provided to compete. A summer such as we experienced this year served to show the effect of air conditioning on customer traffic. It also showed to employers the sad effects of a lack of cooling on employee morale, efficiency and turnover.

But as air conditioning becomes more commonplace in the working and recreation facilities of a community, it begins to create pressure on a huge potential market as yet untapped, the residential market. The man who can work in summer comfort, who can dine out, attend the theatre, buy his groceries, or

bowl without contending with high temperatures and humidity, is not satisfied to return to an uncooled home.

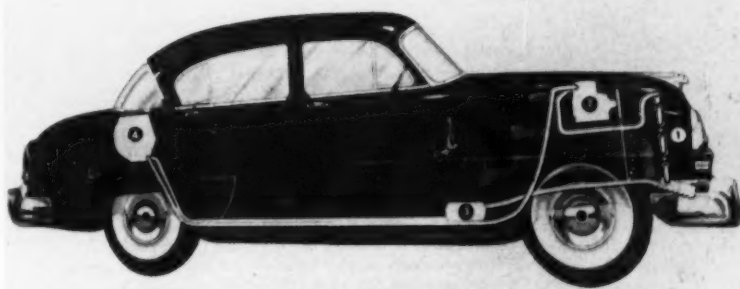
Bringing the art of climate control to its present state has been the work of many branches of American industry and science. Metals, refrigerants and lubricants have played a major part. The sciences of electronics, heat transfer, air movement and compression of gases have contributed to the fund of knowledge. Essential studies of the effects of temperature and humidity on the

human body have been made. As is usually the case, the growth and development of a new industry draws heavily on the work and experience of many unrelated groups in reaching a successful position.

We have only to look back 15 or 20 years to see what strides have been made in this new art. A typical cooling installation of those days consisted of a compressor, a fan and a coil, some duct work and a few outlet grilles. The compressor was a heavy, cumbersome, slow speed affair with little or no capacity control. It compared to present day designs about the way the Corliss steam engine compares to today's turbines and diesel power plants. The coil was an assembly of fins and tubes with good intentions but doubtful capabilities. Refrigerant flow was spotty, temperatures were uneven, heat transfer efficiency was low. The blower was likely bulky, noisy and easily overloaded.

The science of air conditioning consisted principally of blowing cold air without regard for humidity or outside temperature into the conditioned space in an effort to offset the heat gains. Early air conditioning installations frequently had as bad an effect on human comfort as

### Chrysler Offers Air-Cooled Ride in '53 Models



NEW COMFORT FOR MOTORISTS is promised by the automobile air conditioning unit announced recently by Chrysler Airtemp, and shown at the recent preview of Chrysler Corp.'s new 1953 automobiles in Detroit. This artist's rendition shows the car cooler mounted in a four-door sedan. Principal assemblies in the system are (1) two heat-dissipating condensers mounted in the front of the engine under the hood; (2) four cylinder, V-type belt-driven compressor mounted on the right of the engine under the hood; (3) Freon receiving tank; (4) evaporator located in the trunk under the rear shelf. Actual cooling of the car is performed in the evaporator. The evaporator assembly also contains the blower which circulates cool air into the passenger compartment from an outlet in the deck behind the rear seat. In tests last summer, the unit reduced inside car temperatures from 120 to 85 F in less than two minutes, the company says. In normal city traffic, the air conditioning system operates on a 2 hp requirement taken from the car engine crankshaft.

CONTRACTOR NEWS



# could you sell a dollar for 15 cents?

That's the sales story on the Carrier Icemaker.  
Would you like to sell them?

When you show a prospect how to save 85% of what he spends for ice, he's soon a customer. And with this Carrier Icemaker, you can do just that. For just 15 cents worth of water and electricity, the Carrier Icemaker produces about \$1 worth of ice.

Already, bars, restaurants, hospitals, hotels are catching on. They're *waiting* to be sold an ice-making machine. And when they see the list of Carrier features, it's sure to be a Carrier Icemaker that they buy.

Only Carrier has a factory-built-in crusher that provides three grades of crushed ice, in addition to the cubes. Only Carrier gives a choice of three standard storage bins—100, 160 and 240 pounds capacity with custom bins available in larger sizes. Only Carrier requires such small floor space—just 2 ft. square. Only Carrier offers two sizes: 200 and 450 pounds per day capacity.

Dealerships for this profitable, year-round product are available. Complete coupon below for further information.

*A complete icemaking machine, the Carrier with factory-built-in crusher takes only 2 x 2 ft. floor space. Three standard bin sizes (100, 160, 240 pounds capacity). Modifications easily made for larger custom bins.*

**Carrier**

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CARRIER CORPORATION, 311 S. Geddes St., Syracuse, N. Y.

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Street \_\_\_\_\_

Company name \_\_\_\_\_

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State \_\_\_\_\_

a heating system maintaining 90°. You all remember the "20° cooler inside" signs that advertised the early cooling systems. And 20° wasn't the extreme of the shock effect some of these early systems tried to create. There seemed to be a general idea that if 70° was a good standard for winter comfort, it should also be right for summer. Apparently it was not recognized that a change of clothing

## AS WE SEE '53 . . .

J. F. Knoff, general sales manager, Airtemp Div. of Chrysler Corp.:

"The air conditioning industry is at the door step of a great opportunity provided good products, sound merchandising plans and a carefully developed dealer organization are carried out by the manufacturers who have been in this business and by those who are attempting to enter this year."

accompanied the transition from cold to warm in the winter but the man who stepped from a 100° street to a 70° theater had no chance to adjust his apparel to the new conditions.

Because of this striving for shock effect and the accompanying discomfort, early cooling systems contributed in no small way to the prevalence of colds, chills, respiratory trouble and other common ills. It is not surprising then that the term "air conditioning" came to be something less than synonymous with comfort in the minds of the public.

Certain elements of the industry were also guilty of taking advantage of the public's ignorance of air conditioning. Hot air furnaces were advertised and sold to the public as air conditioners. Evaporative coolers were misapplied in areas of high humidity with a consequent temperature reduction and humidity increase. Human comfort was actually decreased rather than increased by such practices.

Every new industry goes thru its trial and error period and air conditioning has been no exception. Certainly no claim can be made that the science of climate control has reached its ultimate in development. We have much to learn about human comfort, about heat trans-



fer, about manufacturing techniques and about installation practices. None the less, air conditioning as an art has reached a stage of respectability and integrity. We can give the consumer honestly built, reliably rated equipment, applied in a way which will contribute a marked increase in his comfort. You contractors can install the equipment and accessories properly and profitably. So the consumer knows today he can buy an air conditioning installation with the same assurance that he buys an automobile because competent manufacturers and service agencies stand behind it.

The past 20 years have seen major strides in the air conditioning industry. Equipment has been improved and manufacturing techniques developed to reduce cost. Application engineering has kept pace to improve performance and to produce more desirable comfort conditions. Installation practices have been constantly improved to contribute to the satisfaction of the customer with the installed system. Team work between the manufacturer, the engineer and contractor

#### AS WE SEE '53 . . .

John W. York, sales manager,  
Typhoon Air Conditioning Co.:

"We expect our greatest increase to be in the field of residential central heating and cooling units. The outlook for 1953 looks better than at any time in the past. Last summer's heat wave, and a growing acceptance of air conditioning in general have brought air conditioning into a sharp prominence in all fields. However, the biggest single factor should be mass public interest in air conditioning which, triggered by window unit popularity, is likely to take on the proportions of a major marketing development during 1953."

has paid off in the public acceptance

Trade associations have played a major part in bringing about a wider and wider acceptance of air conditioning. Manufacturing associations have worked to develop standards of construction, reliability of ratings and standards of ethics in sales practices. Contractor associations have worked to perfect installation practices.

It may be of interest to review



Develop an "X-ray" eye—

**'AMPROBE' IT!**

Now you can diagnose trouble calls at a glance, without shutting down equipment or making ammeter connections. Just snap the Amprobe around one conductor (insulated or uninsulated) and you have an accurate current reading. Walk in with this pocket-size snap-around volt-ammeter, and "you're the doctor." Write for Catalog.  
Dept. CR23, Pyramid Instrument Corp., Lynbrook, N. Y.  
(Export Div.: 458 Broadway, N. Y. 13.)

**Amprobe "300"** 0-6/15/30/60/150/300 amps A-C. 0-150/300/600 volts A-C. Complete with cowhide case and voltage test leads: \$49.50. **Amprobe "600"** (to 600 amps A-C) \$59.50 complete. **Amprobe "1200"** (to 1200 amps A-C) \$67.50 complete.



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how the concept of good air conditioning practices has evolved over the past few years. Perhaps, the most significant has been the development of the unit idea in air conditioning equipment. Early systems generally were made up of individual components—compressor—fan—coil—frequently purchased from three different manufacturers and assembled on the job. The disadvantages are obvious. Responsibility for correct assembly and application is thrown on the contractor who may know the least about

the performance capabilities of the three individual components. In the event of improper operation there is a beautiful case of divided responsibility, often making final settlement difficult.

Out of this beginning has developed the idea of package air conditioning which means briefly the factory assembly of all the major components which can be delivered to a job ready to operate with a minimum of connections. Such units are now available in packages from 1/3-hp to 25-hp. Thus a wide range

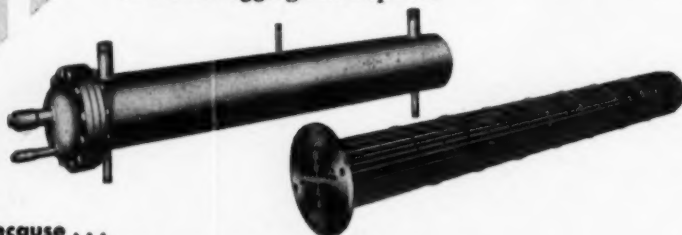
of jobs may be covered by such equipment. Of major importance to the contractor is the fact that the manufacturer takes the responsibility for the proper working together of the various components. The refrigerant piping has been done at the factory by the manufacturer and is again his responsibility. The consumer has only one place to turn for satisfaction in the event of improper operation.

Such machines have been playing a major part in furthering the growth of a larger group of air conditioning contractors. The contractor who knows refrigeration but little of heating or air handling and, conversely, the contractor who knows heating and air handling but little of refrigeration, have both been able to undertake cooling work through the application of the package unit idea.

In the growth of air conditioning generally, perhaps the most phenomenal development has been in the rise of the so-called window air conditioner. In 1951 no less than forty-two million dollars worth of these one-ton and smaller units were sold. When the returns for 1952 are in I expect to see a major increase over even that enormous

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1. Improved heat transfer
2. Rapid response to Thermal Expansion Valve
3. No oil logging and slop over



Because . . .

### Taco's "Controlled Velocity" Tube Bundles . . .

Carry *all* incoming liquid to the top of the Chiller in the first pass.  
Provide constant forward movement of *all* refrigerant and oil.  
Prevent accumulation of liquid (refrigerant or oil) in any part of the Chiller.

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### Taco's "Controlled Velocity" Heads . . .

Agitate oil and liquid refrigerant, at each head pass, with a constant stream of expanding gas.  
Provide unretarded flow of refrigerant.  
Eliminate "traps" for oil and liquid refrigerant.



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figure. Think of it—nearly fifty million dollars in one year in a product that was virtually unknown five years ago. That in itself is a measure of the growing demand for air conditioning.

The position of the window air conditioner in the overall air conditioning picture may be rather controversial. The part it is playing is important. It is fulfilling—not per-

fectly but in a currently acceptable manner—a demand for what may be called spot cooling. The small office, the bedroom in a home and other like urgent cooling problems. By creating a degree of comfort in such installation, it is furthering the public acceptance and demand for more and more cooling in the structures that must be visited or occupied in the course of everyday living.

But quite frankly, I believe the window air conditioner to be a stop

#### AS WE SEE '53 . . .

**Leonard H. Solomon, assistant to the president, Mitchell Mfg. Co.:**

"We expect room air conditioners to make gigantic strides in sales increase in 1953 and for many successive years. We anticipate that the window type room air conditioner will become the best selling item in the major appliance field."

gap, an interim partial solution to the year round air conditioning problem. I say this in the face of the fabulous sales figures developed in the past year or two by this device. It is a stop gap because it only partially solves the problem of indoor climate control. It cools and produces a degree of comfort but has its limitation in air distribution and humidity control. It is currently in use to do a partial residential cooling job, to cool an office in a building not otherwise air conditioned. Its uses to do a complete cooling job for an office building or residence is obviously impractical and expensive.

Therefore, blessing though it may be to the sweltering office worker or apartment renter, it seems to me that in the long run it will come to occupy about the same position in the scheme of things as the space heater. It improves what existed before but does not present a practical long range solution to the problem of indoor climate control.

From your own point of view it probably has a minimum of interest too. As its development has progressed it seems to come more and more to be handled, merchandised, and installed as an appliance. It seems to be as much a part of the appliance dealer's stock in trade as the TV set and the refrigerator. The average refrigeration and air condi-

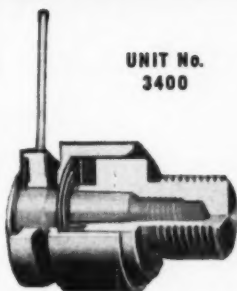
tioning contractor is not at present, at least, set up to give this product the type of sales merchandising it seems to require.

There is a great difference, I believe, between the very small and the medium and large self-contained air conditioners. For one thing the three-ton and larger units are complete air conditioners in every sense of the word. They are sized to job requirements. They handle an overall job. In large spaces they control temperature and humidity and finally, they can be used for winter

heating to give a year-round job. I believe the position of the larger SC unit in the air conditioning future is assured. The larger package units are the machines you are installing and servicing. Refrigeration and air conditioning contractors will be using them more and more frequently. They represent an important and enduring development in air conditioning progress of the past few years.

**BUY FROM YOUR  
REFRIGERATION WHOLESALE**

## ROTARY SEAL Replacement Units



**Easy to Install  
Efficient in Operation  
Simple in Construction  
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**AVAILABLE FOR  
MORE THAN  
900**

### COMPRESSOR MODELS

For Commercial, Semi-Commercial, Air Conditioning and Home Refrigerator Compressors... proven by 20 years of outstanding performance!

**UNITS FOR  
ALL  
STANDARD  
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AT ALL  
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**CONTRACTOR NEWS**



## 2 DETROIT CONTRACTOR ASSOCIATIONS MERGE

Two Detroit refrigeration contractors' organizations have recently combined into a single group that will be known as the Refrigeration & Air Conditioning Contractors Association of Detroit.

The new group is a member of the national Refrigeration & Air Conditioning Contractors Association (RACCA). One of the organizations involved in the merger, the Refrigeration Contractors Association of Detroit, had been affiliated with

RACCA, and was comprised of about 50 contractors. The other group, the Air Conditioning Contractors Association, was made up of 10 of the contractors handling the large air conditioning and refrigeration installations in the area.

This group has voted to disband and become members of the new association. Two members of this group, Dan Lewis and Norman James, Jr., were elected members of the board of directors of the new association.

George Murphree heads the new

association as president. Joseph W. Heffernan is vice president, and William Schemers continues as secretary-treasurer.

Other directors of the association are Irwin A. Barlass, Victor Buch, Joseph Clark, M. R. Wood, Henry Veyant, Jack Winslow, and Victor Fabian, in addition to the officers.

## L. A. CONTRACTORS PLAN DIRECTORY OF SERVICES

A directory listing the facilities, services and products that its members have to offer prospects and customers for refrigeration and air conditioning equipment is being prepared by the Refrigeration and Air Conditioning Contractors Association of Southern California, at Los Angeles.

Modeled along the lines of the directory published for the past several years by the Chicago RACCA organization, the pamphlet will be distributed among architects, owners, general contractors, state, city and county governments, and other locations where air conditioning and refrigeration work in large volume is being done. It will serve as a reminder of the services which Los Angeles contractor association firms have to offer, and the various lines of equipment which they represent.



**"Keep Cool with ESTON!"**

### METHYL CHLORIDE • SULFUR DIOXIDE

Distributor of "Kinetic" Chemicals' "Freon" refrigerants  
"FREON 11"—"FREON 12"—"FREON 21"  
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In Standard Containers

Eston Refrigerants  
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CHARGE-A-CAN  
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## ESTON CHEMICALS DIVISION

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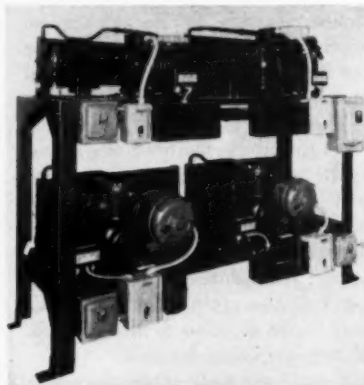
3100 East 26th Street, Los Angeles 23 • 40 East 42nd Street, New York 17

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## FACTORY ASSEMBLED



NEW MULTIPLE condensing unit assembly recently introduced by Hussmann Refrigeration, Inc. is designed to save floor space and cut down installation costs. Each assembly is custom-built for the individual installation to assure maximum efficiency and workmanship. It is shipped completely assembled with all necessary controls mounted and pre-wired, eliminating the necessity of field mounting and assembly.



## YOUR TAX I.Q.

Answers to quiz on page 37.

1. c. Your son's prize here would be considered taxable income. That raises his total income to \$601, and he cannot qualify as a dependent if he has income of \$600 or more.
2. a. The amounts spent should be deductible as business expenses, if you kept a careful record which lists them in detail, and shows clearly that the entertainment was with a predominating business motive and not merely reciprocal, or incident to the vacation.
3. b. A non-business bad debt is a capital loss. And you can take only \$1,000 a year in capital losses—unless you can apply them against capital gains. You are allowed to carry over unused losses for five years; better get expert advice.
4. b. Assuming your income is classified as self-employment income (see tax instructions) and is not from engaging in an exempt profession, a tax of  $2\frac{1}{4}\%$  on the first \$3,600 is due with your income tax return—so you owe \$81.
5. c. You cannot deduct contributions to an organization which spends a substantial part of its time on lobbying or political propaganda.
6. b. In this case, you can file a claim for refund within three years from the date your return was due.
7. b. If your wife works for you, you are not supposed to pay social security taxes on her salary, nor is she supposed to make her contributions.
8. b. On leased property, you normally spread the cost of improvements over the life of the lease.
9. c. The roof is an improvement, not deductible currently like ordinary repairs. Its cost is deductible as depreciation spread over its estimated useful life.
10. c. Inheritance taxes are not deductible. The others listed are deductible.

## ST. PAUL FIRM APPOINTED

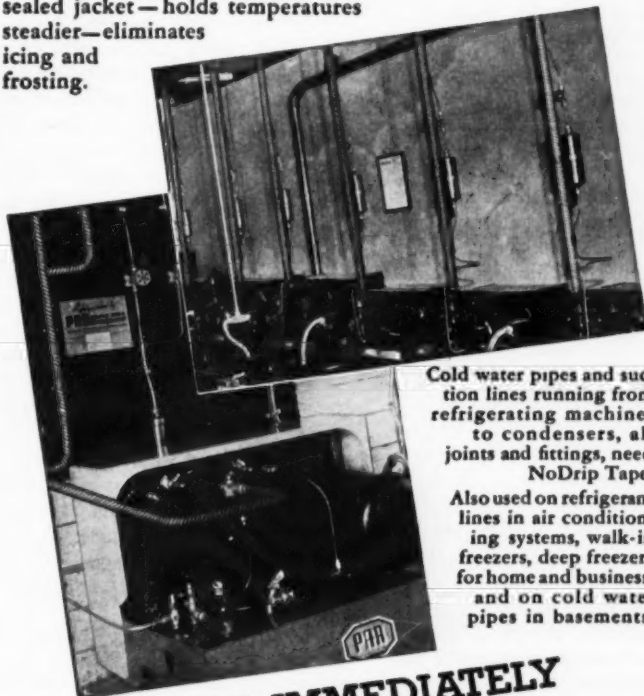
A franchise to sell Westinghouse self-contained and field-assembled air conditioning equipment has been awarded to the National Engineering Co. of St. Paul, Minnesota, it was announced recently by W. B. Cott, sales manager for Westinghouse Air Conditioning. The firm is headed by J. W. Gore.

# NoDrip TAPE

## SOLVES the Problem of CONDENSATION DRIP

- KEEPS PIPES CLEAN AND DRY
- PREVENTS RUSTING, THUS PROLONGING LIFE
- KEEPS FLOORS DRY AND SAFER

NoDrip Tape forms a tight fitting, sealed jacket—holds temperatures steadier—eliminates icing and frosting.



Cold water pipes and suction lines running from refrigerating machines to condensers, all joints and fittings, need NoDrip Tape.

Also used on refrigerant lines in air conditioning systems, walk-in freezers, deep freezers for home and business, and on cold water pipes in basements.

## EFFECTIVE IMMEDIATELY

After you have followed the easy application directions and NoDrip Tape is in place, dripping will stop. No tools or brads are needed. NoDrip Tape is wound around pipes and pressed in place with the hands.

**CONTRACTORS**—Include NoDrip Tape protection in your estimates, not only to stop dripping, but for the sake of good appearance on finished installations.

**MANUFACTURERS and SERVICE ENGINEERS** Investigate the many advantages of NoDrip Tape for condensation control and rust prevention.

**Order Through Your Supply House**  
Circular on request

## J. W. MORTELL CO.

Technical Coatings Since 1895

553 Burch Street Kankakee, Illinois

A roll covers about  
10 feet of 1/2" pipe

**\$1.69** list

Higher West of Rockies  
and Canada



# COMMERCIAL *Refrigerator* SALES NEWS

## Make Money on Trade-Ins or Go Out of Business, Dealer Warns

*A condensation of an address presented by George F. Wiedemer, Cable, Wiedemer, Inc., Rochester, N. Y., distributor, at the sixth annual convention of the National Commercial Refrigerator Sales Association.*

**H**OW to make a profit on trade-ins—certainly that is a subject which must be uppermost in the minds of most distributors, because without an effective and profitable method of disposing of trade-ins a fixture house cannot possibly succeed.

As competition becomes keener, the value of a trade-in becomes more important to the salesman and to the owner. We in our business, for example, have secured many deals that might possibly have been lost to competition if we had not properly estimated the true value of the trade-in.

Among certain classes of customers there is an active demand for good used equipment at a fair price, and hardly a week passes but what we consummate at least one deal involving a combination of new and used equipment. In many of these instances we wouldn't have made the new equipment sale if we had not been able to supply a used piece which fit the customer's needs and pocketbook.

An adequate shop set-up for reconditioning purposes also is an important factor in being able to handle used equipment profitably. Ours is located on the second floor, opening into our storage and display areas. Our freight elevator opens on two sides, permitting us to load right from the truck platforms

on the main floor. We never realized the time, labor and money that this arrangement would save us.

At the present time we have two lines of used equipment going through our shop simultaneously, one for food market equipment and the other for kitchen equipment. We employ two men in this shop, which is directly under the supervision of our service manager and his assistant.

We do all our painting and cleaning here. We replace any parts needed. We also re-glaze all cases, and the equipment that comes from this room is tested right there before being moved—gas equipment as well as refrigeration equipment. We do not test used compressors here, as we have a separate repair shop in the basement just off the opening to the elevator, which makes for short handling.

### Tie-In Displays Sell

As this equipment is finished, it is displayed in two areas on the first floor where we sandwich in several pieces of excellent buys, putting it near the new equipment. This sometimes helps promote the sale of new equipment as well. This applies to both market and restaurant departments. The balance of the used equipment is stored and displayed on the second floor in an area adjacent to the shop.

Now as to profit, we mark up our used equipment on its *value* rather than on the percentage of money invested. Generally, if a piece has been used only a few years, we price at approximately 60 to 65% of what a similar piece of new equipment would cost—not at the list price, but at a fair mark-up. Older

pieces are priced from 1/3 to 1/2, on the same basis.

We buy used equipment from some of the chain stores in the area. This helps our relations with them and also enables us to buy open self service equipment, particularly, at a cheap price. We also follow auctions and buy up electric power saws, scales, slicers, grinders, and good used self service open equipment. This applies also to our restaurant department, although the values of restaurant used equipment cannot be compared with those of market equipment, in my opinion.

We have been overly conscious of new and improved methods of repairing our used equipment, and

### AS WE SEE '53 . . .

**Paul H. Sullivan, executive secretary, Commercial Refrigerator Manufacturers Association:**

"Our industry does not manufacture consumer goods but capital equipment, as used in food stores, hotels, restaurants and institutions. It is not, therefore, so subject to consumer trends or saturation factors, as is the case with household refrigerators, room air conditioners, etc.

"Prospects for the first quarter are excellent and we expect to show a substantial increase of about 25% over the first quarter of 1952, which in common with many businesses, was discouraging. After that we expect to fairly well hold our gains without, however, any real expectation of 1953 exceeding 1952, due to the growing evidences of a recessionary character which are causing general concern.

"Easing of construction restrictions by Government, plus the fact that food retailers' profit margins are steadily narrowing due to the creeping paralysis of mounting costs, should bring about a greater demand for modernization of existing stores and the erection of new units.

Summing it up, our people are optimistic but also trying to be very realistic."

have purchased sanding machines, cleaning machines, and other machines that will allow our men to turn out more work per day. We always listen to a salesman who may have some new sort of gadget for improving the work of reconditioning.

As to sales, I should say that our greatest sale of used equipment comes from the country areas. Our

four men who cover seven New York State counties are constantly checking the stock for newly arrived pieces. We get out fliers to our men as soon as new pieces arrive, giving the price and condition. We also use direct mail occasionally, and we use the newspapers, particularly in the spring.

As to salesmen's compensation, our men are paid the same percentage on used equipment as on new. We also offer a 50-50 split on prices obtained over the established selling prices of the equipment. This makes for incentive on the part of the salesman to get better prices. On installation of used equipment we give 90-day free service and guarantee.

We have many pieces that have been in and out of our store many times and that have been instrumental in securing orders for new equipment or have led to full conversions of other departments in the customer's store. As a result of this experience, we cannot too strongly emphasize our feelings on the importance of properly and profitably handling used equipment.

#### J. S. LIPACK TO MANAGE WARREN N.Y. BRANCH

Joseph S. Lipack has been named general manager of New York branch of the Warren Co., Inc. which was opened officially on Jan. 1 of this year. Announcement of Lipack's appointment to head the company's New York operation



was made by Roger D. Jacobs, vice president in charge of sales for Warren.

For the past 18 years Lipack has been vice president, general manager and treasurer of Super-Cold New York Co., Inc., and has spent his entire business career in the commercial refrigerator field in metropolitan New York. He also was a director of Super-Cold Corp., of Los Angeles.

During his association with Super-Cold, Lipack established and maintained sub-branches in Newark, Baltimore and Philadelphia,

maintaining an annual sales volume in excess of \$2 million.

A former director of National Commercial Refrigerator Sales Association, he has been active in recruiting members for that organization. He is also a member of ASRE and of the Sales Executives Club of New York.

Headquarters of Warren's New York sales office have been established at 29-19 39th Ave., Long Island City.

A number of Lipack's former associates have also joined the War-

ren organization. These include:

E. W. Gunther, sales manager; district sales managers L. Nevitt and H. Pachtman; L. I. Martin, sales investigator; sales representatives F. Benedikt, P. Royer, A. Oettinger, S. Tanella, H. Davidson, W. Perry, H. Levy, T. Sturm, and Benj. Bromberg; George E. Shavers, in charge of accounting; and Miss Allene Harris, clerical administration.

Under the New York branch there will also be a sales office at 752 Springfield Ave., Irvington, N. J., with H. Mazue as district sales man-



#### The Viking All-Purpose Self-Contained Display Case

It's easy to sell your customers when they see how they can make extra sales . . . extra profits. So prove to them that the Viking All-Purpose Display Case (8' and 10' lengths) really pays off.

The Viking All-Purpose Case provides adequate moisture, proper refrigeration, attractive display for vegetables, fruits, dairy products, delicatessen items, smoked

meats. That means your customers can increase their profits by increasing their margin, increasing sales volume and by eliminating losses and spoilage. These three items can add up to thousands of dollars in only a year's time.

Yes, the Viking All-Purpose Case is easy for you to sell wherever refrigerated items must be displayed. Get the full story on this profit maker. Send in coupon at once.

Inquire about a Viking franchise TODAY!

SINCE 1904



MAIL COUPON TODAY  
Viking Refrigerators, Inc.  
7508 Wilson Avenue, Kansas City 3, Missouri

☐ Please send me complete information about Viking's new All-Purpose Case.

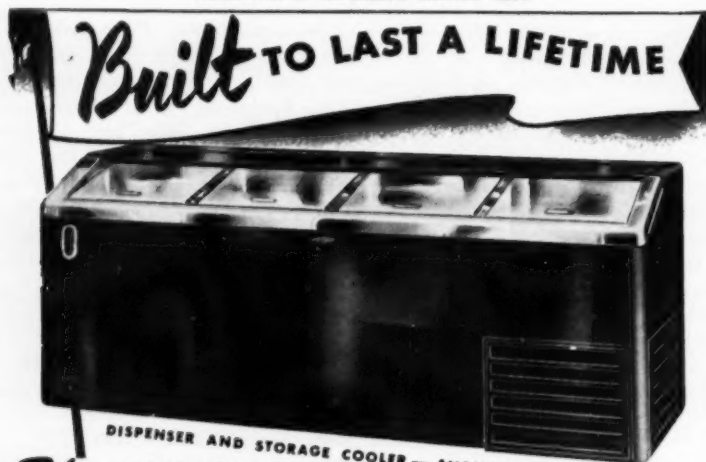
☐ Tell me about the availability of Viking franchises in my area.

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7500 Wilson Ave., Kansas City 3, Mo.





## Built TO LAST A LIFETIME

### The FAMOUS P-H DRY BEVERAGE COOLERS

DISPENSER AND STORAGE COOLER — AVAILABLE IN 7 MODELS

CHOICE OF PORCELAIN OR STAINLESS STEEL EXTERIORS

For fast, economical, uniform cooling you can't beat the new P-H Dry Beverage Cooler. In over 20 years of field testing the patented P-H forced updraft cooling system has been proved superior to any other type. Models with black porcelain exteriors have stainless steel working surfaces. Choice of 50", 6', 8' or 10' models, bar tops if desired . . . emote or self contained. SEE YOUR NEAREST P-H DEALER . . . OR Write —



**PUFFER-HUBBARD MFG. CO.**  
GRAND HAVEN, MICHIGAN



REACH-IN & PASS-THRU CABINETS — DISPLAY AND DAIRY-DELICATESSEN CASES — DOUGH RETARDERS — BAKED GOODS FREEZERS — WALK-IN COOLERS

ager and S. Strauber, M. Giubardo and M. Capozzi as sales representatives.

According to Roger Jacobs, Warren vice president in charge of sales, the company considers this the most significant new distribution outlet it has established in a number of years. Jacobs and E. N. Barton, Warren assistant sales manager, were in New York recently to meet with the new branch's sales staff.

#### AS WE SEE '53 . . .

Leon P. Krause, vice president, Coldin Cabinet Co., Inc.:

"The large super market chains will build more stores in 1953 than in 1952 to take the bulk of the open type equipment. The smaller stores will be further pushed into semi-self-service and they, too, will need new equipment. This, in addition to the food freezer plans and the need for reach-in and chest-type food freezers should keep the refrigeration equipment manufacturers busy for the next two years."

#### FOGEL MAPS SERIES OF REGIONAL MEETINGS

The 1953 sales program of Fogel Refrigerator Co. will be keyed to regional dealer sales meetings throughout the country during the first six months of this year, according to E. A. (Terry) Terhune, vice president in charge of sales.

Ten district managers of the Fogel company met with factory officials in Philadelphia Jan. 23 and 24 for a two-day sales conference. The meeting included an inspection of the plant by the field representatives, presentation of new 1953 models and a discussion of the 1953 sales program.

Regional meetings will start with one at the Hotel Prince Charles, Fayetteville, N. C., on Feb. 23, for all active and prospective dealers in Virginia and the Carolinas. William Fogel, president, will be the key speaker at the meeting, and a special sales presentation will be made by Terhune. J. E. Mead, district manager with headquarters in Richmond, will be chairman of the Fayetteville meeting.

Co-host at the meeting will be C. E. Smith, president of Smith Refrigeration Sales Co. of Fayetteville, who will hold an "open house" at his showrooms for a pre-meeting



## LIQUID EYE®

now in the New, individual tear-off carton to  
**MAKE MORE SALES for you!**

## LIQUID EYE®

means:

- Perfect refrigerant visibility
- Straight-through flow
- No turbulence
- Leak-proof
- Shock-proof
- Vibration-proof
- High safety factor
- Spring-loaded gaskets

Sold by Leading Wholesalers.  
Send for Catalog B-52 covering  
the complete Allin line.



**Allin MANUFACTURING COMPANY**  
1153 West Grand Ave., Chicago 22, Ill.

1.

Simply tear off perforated panel carrying your phone number.

2.

Wrap tab around liquid line. Identifies your service to customer.



display of Fogel equipment. Sales conference will start at 5 p. m. with cocktails, followed by dinner and the sales meeting thereafter.

A southeastern meeting is scheduled for Feb. 25, with location to be announced shortly. The Chicago regional meeting will be held on March 30, followed on April 1 by a similar meeting in St. Louis.

The New York City meeting will be on April 22, during the Frozen Foods Exposition at Grand Central Palace. This meeting will be for active and prospective dealers in New England, New York state, eastern Pennsylvania and New Jersey. The Pittsburgh regional meeting will be held on May 20, with meetings in the Detroit, Cleveland and Cincinnati set for the week of June 15.

#### AS WE SEE '53 . . .

**W. F. Bakke, president,  
Sub-Zero Freezer Co., Inc.:**

"We look forward to a considerable increase in volume of freezers for 1953. I have been traveling from coast to coast recently, and I find the business outlook for refrigeration in the South is very good, especially in upright freezers and room air conditioners. These two items seem to be uppermost in all dealers' minds. I believe we will see a very large volume in both of these items in 1953."

#### NEW SHOPPING CENTER HAS YEAR-ROUND PLANT

The Comfortair Co. and the SOS Sheet Metal Co. of Hackensack, N. J., have been retained to install heating and cooling equipment in two of the 15 stores in the Mitchel Manor shopping center at East Meadow, L. I. Frank Hudik, president of Comfortair Co., reports that the stores involved are a 15,000 sq. ft. Food Fair and Woolworth store, which has an area of 10,000 sq. ft.

Several unusual techniques will be employed by Comfortair on the Mitchel Manor project. Each of the stores will have its own supply and diffusion well to furnish and dissipate the water used in the cooling process. Hudik expects to drill at least 70 feet for water, with a flow of 70 gpm being required for cooling the Woolworth store and 130 gpm needed for the Food Fair store.

Since the water will be approximately 54 degrees when taken from the well, no refrigeration will be in-

involved, the water being introduced into an air handling unit that will contain filtering, cooling and heating elements. Fresh air will also be introduced into each store for ventilation and for off-season cooling. In this case, 40% fresh air will be introduced into each store rather than the usual 10 %. This will result in a fresher atmosphere.

In the summer, moisture will be taken out of the air, with the turnover of air set at 12,000 cfm in the Woolworth store and 24,000 cfm in the Food Fair.

#### CHAINS SHOW BIG GAIN IN LOW TEMP USAGE

Members of the National Association of Food Chains replying to a recent questionnaire reported that they use an average of five frozen food cases per store, compared with 1½ five years ago, and they intend to install an average of 6½ cases in new stores. The survey covered 7,600 markets.

The study also revealed that frozen foods will account for about 3.6% of the participants' 1952 volume, against 1.5% five years ago.

**SATISFIED CUSTOMERS SAY:**

# Oceans of Beer

...without a lick  
of trouble



## Beverage-Air DIRECT DRAWS

Top-notch performance and trouble-free service! That's the story that hundreds of satisfied users tell about Beverage-Air Direct Draw Systems . . . a story that can add up to increased volume for you.

When you sell Beverage-Air, you sell incomparable service -

- No messy water tanks, troublesome air or water duct type cooling.
- No excessive, complicated controls.
- A perfect glass of beer drawn each time through non-toxic, sanitary lines that contain less than one ounce of beer from the keg to the faucet tip, at the correct serving temperature.

Beverage-Air Direct Draw Systems will give your customer satisfied service that adds up to "Oceans of Beer without a lick of trouble".

Write today for complete information on Beverage-Air equipment, and direct mail literature for mailing to your customers.

**THE PUNXSUTAWNEY CO.**  
PUNXSUTAWNEY, PA.

Branch Office: 480 Lexington Ave., New York 17

## MEASURE HUMIDITY

*simply, quickly,  
accurately*

*with a*  
**BENDIX-FRIEZ  
PSYCHROMETER**



Hand Aspirated Psychrometer, Model HA/2, is ideal for taking humidity readings in confined areas.

Want an accurate means of proving the need for air conditioning? Want an easy way to check the system after installation?

A Bendix-Friez Psychrometer can give you the answer on both counts. The Hand-Aspirated Psychrometer, for example, furnishes fast and accurate humidity readings, yet requires no special skill to operate. In addition, it comes in a pocket-size plastic carrying case, making it an especially practical tool for air conditioning and heating engineers.

The complete line of Bendix-Friez Psychrometers—both hand and motor-aspirated—assures you of getting the exact type that will serve you best. Check your needs with Bendix-Friez today.



**BENDIX-FRIEZ**

### **PORTABLE TEMPERATURE AND HUMIDITY RECORDER**

Model 160

Another outstanding Bendix-Friez instrument for proving the need and checking the installation. Provides 3 x 5" charts, 10 or 30 hour records. Built to U. S. Weather Bureau standards.



1410 Taylor Avenue  
Baltimore 4, Maryland

EXPORT SALES: Bendix International Division  
72 Fifth Avenue, New York 11, N. Y.

Circle No. 44 on Reader Service Card

60

## USEFUL

### **BULLETINS • BOOKLETS • CATALOGS**

The publications listed below are available to readers without charge. Simply circle on the postcard in this issue the key numbers of the items you wish to receive. Your requests will be forwarded directly to the companies concerned.

**HEAT TRANSFER EQUIPMENT** for refrigeration and air conditioning applications is the topic for the new catalog issued by Standard Refrigeration Co. This new manual, complete with illustrations and useful tables, covers cleanable and counterflow condensers, both shell-and-coil and shell-and-tube types, liquid receivers, stainless steel evaporators and adjustable capillary valves.

Circle No. 111 on Reader Service Card

**THREE NEW CATALOGS** have been issued by Warren Co., Inc. which cover the firm's reach-in refrigerators, beverage coolers and walk-in refrigerators. Each type of equipment is presented in a four-page brochure and contains photographs and information pertaining to the type illustrated.

Circle No. 112 on Reader Service Card

**YOUR LIFTING PROBLEMS** may be solved if you can use the information contained in Lug-All Co.'s new bulletin describing the firm's line of combination winch-hoists. These 8¾-pound hoists have a lifting capacity of up to 1½ tons. Featuring illustrations of three new models, bulletin 220 covers many of the unique applications possible.

Circle No. 113 on Reader Service Card

**INFORMATION CONCERNING APPLICATION** of Dravo "Counterflo" heaters for eight other applications besides space heating is the feature of this revised Dravo 12-page bulletin. Other than space heating applications, this bulletin (No. 523-B) covers uses in functional heating, process drying, temporary heating, medium temperature drying, tempering make-up air, drying vehicles after washing, crop drying, and integration with air conditioning systems.

Circle No. 114 on Reader Service Card

**INTERCHANGEABLE BACK BAR** equipment is covered in the new catalog of Flex-O-Unit equipment presented by Stainless Food Equipment Co. Including such standard units as hot water tables, refrigerators, water stations, etc., this bulletin shows how new and existing installations can be modernized at lower cost.

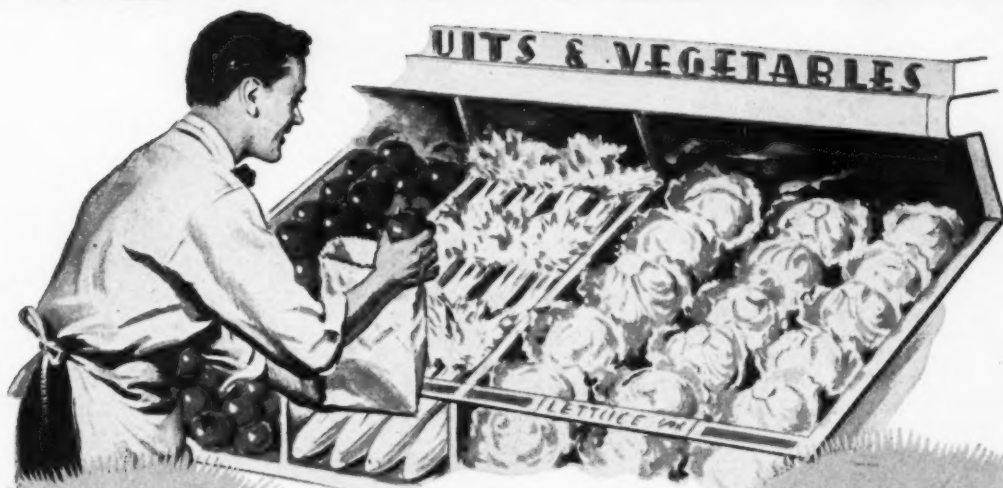
Circle No. 115 on Reader Service Card

**A SCREW DRIVER** to fit any job can be found in the 34-page bulletin issued by Vaco Products Co. This booklet has information on the complete line of screw drivers, nut drivers, and plastic hammers made by Vaco. Bulletin number 802 contains specifications on all tools illustrated.

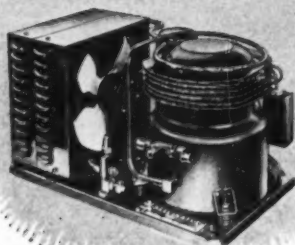
Circle No. 116 on Reader Service Card

(More Useful Literature on pages 63, 64)

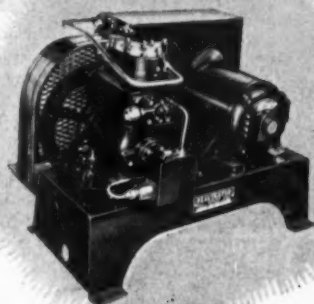
When your business depends on **Cold**  
 YOU CAN DEPEND ON  
**Kelvinator!**



**Heavy-duty job or light-duty job, Kelvinator has just the right unit to satisfy it**



**Hermetic Model  
Model 6D2CRA  
(1½ H.P.)**



**Open-Type Model  
Model O-75  
(¾ H.P. Air Cooled)**

**D**RIED OUT, unappetizing fruits and vegetables mean dollars out the window for produce market operators. That's why alert owners not only have cold rooms for storage, but also refrigerated display racks . . . both powered by Kelvinator. People who depend on cold for profits put their faith in Kelvinator, because Kelvinator has proved itself over and over again for 38 years. The 1953 Kelvinator condensing units—both hermetic and open-type—are the most up to date and most efficiently designed in the field.

No matter what your refrigeration requirements may be, Kelvinator has a unit to satisfy them.

**You have 30 models to choose from—15 hermetic units (including 4 new Freon-22 units), up to ½ H.P. . . and 15 open-type units, from ¼ H.P. up to 5 H.P.** For full information, contact your Kelvinator distributor, or write Kelvinator, Division of Nash-Kelvinator Corporation, Detroit 32, Michigan.

**For Profit Today . . . Tomorrow . . . and Always . . .**

**Depend on Kelvinator**

**SPECIALISTS IN REFRIGERATION SINCE 1914**

Circle No. 45 on Reader Service Card

and AIR CONDITIONING • FEBRUARY, 1953



## "It's the best refrigerant for the job"

For years servicemen all over the country have insisted on "Virginia" quality refrigerants.

EXTRA DRY ESOTOO, for instance, is the refrigeration grade  $\text{SO}_2$  that has proved eminently satisfactory for the last 20 years. You get no call-backs because of corroded lines, stick-ups, frozen expansion valves when you use Esotoo. It's available in all popular cylinder sizes.

V-METH-L—"Virginia" Methyl Chloride—is specially made for refrigeration use. Its low moisture

content, low acidity and narrow boiling range meet the most exacting requirements. Each cylinder is triple tested to eliminate impurities which cause sludging, plating and other common troubles.

"Virginia" also distributes a complete line of Kinetic Chemical's "Freons." Two of these—"Freon-12" and "Freon-114"—are available in Can-O-Gas, the handy throw-away, no-deposit can which is ideal for charging hermetic systems, water coolers, and vendors.

See your wholesaler for these world-renowned quality refrigerants, or write **VIRGINIA SMELTING Co., West Norfolk, Va.**

**VIRGINIA**  
Refrigerants

ESOTOO • V-METH-L • KINETIC CHEMICAL'S "FREONS"  
CAN-O-GAS • PERMAGUM • PRESSTITE TAPE  
SOLVEX PRODUCTS • SUNISO REFRIGERATION OILS

Circle No. 46 on Reader Service Card

**FEBRUARY, 1953 • COMMERCIAL REFRIGERATION**



## USEFUL LITERATURE . . .

*Continued from page 60*

**SELF-SERVICE SHELVING** designed for merchandising of groceries, bakery goods, drugs, hardware and variety store items is the subject of the new bulletin published by S. A. Hirsh Mfg. Co. The four-page brochure describes how these boltless shelving brackets and uprights are employed in the construction of self-service displays.

Circle No. 117 on Reader Service Card

**MULTI-PURPOSE MERCHANDISER** for vegetables, dairy products and fruit is described in the new catalog sheet issued by Sherer-Gillett Co. The information given on model UL3200MB includes complete specifications with illustrations and photographs of various applications.

Circle No. 118 on Reader Service Card

**TEMPERATURE-HUMIDITY TEST CHAMBERS** which can simulate temperatures from -100 F up to 200 F and relative humidities from 20 to 95% are detailed in a new bulletin issued by Tenney Engineering, Inc. This four-page, two-color booklet contains specifications on heaters, humidification, temperature and humidity controllers, and air circulation. Interior dimensions and temperature ranges for eight different standard model types with performance characteristics and typical applications are also included.

Circle No. 119 on Reader Service Card

*Continued on page 64*



A new Super Market with Federal Displays in every department

## Best Sellers build sales

Whatever your display . . . customers  
judge you by ease of self-service,  
and by tempting, fresh **REFRIGERATED FOODS**

### FEDERAL PROVEN DISPLAYS

ARE SERVING NATION-WIDE

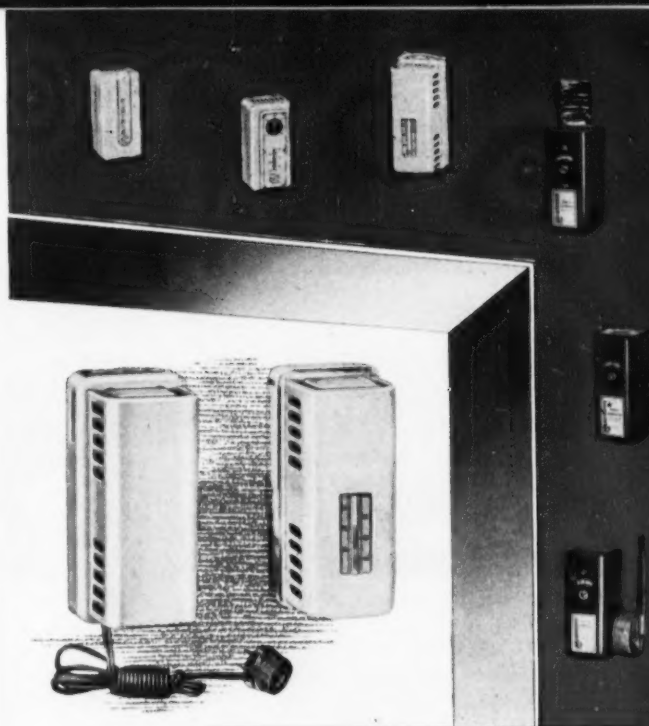
WRITE FOR YOUR STORE PLAN TODAY

FEDERAL REFRIGERATOR MFG. CO., Waukesha, Wis.



Circle No. 48 on Reader Service Card

Circle No. 47 on Reader Service Card



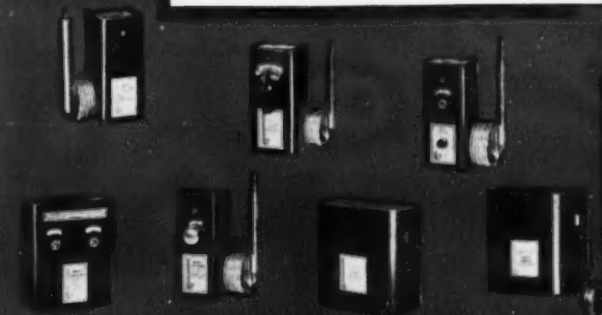
## White-Rodgers Line-Voltage THERMOSTATS are UNEQUALED for HEAVY-DUTY SERVICE

Positive Hydraulic-Action accuracy and long-lived reliable service make these White-Rodgers Line-Voltage Thermostats the ideal choice for heavy-duty air-conditioning applications.

Extra rugged switch will handle most jobs without use of motor starters or relays.

The sturdy tamper-proof steel case is finished in ivory and chrome, highlighting its attractive design. The variety of types and special features such as **locked case, concealed dials, two-circuit types, cord and adaptor plug, etc.**, provide the best possible performance for each specific need.

*Write today for complete catalog.*



## WHITE-RODGERS



*Controls*

FOR REFRIGERATION  
HEATING AND  
AIR CONDITIONING

White-Rodgers Controls Co., Inc.  
New York 17, N.Y.—Long Island City 1,  
N.Y.—Chicago 11, Ill.—548 N. LaSalle St.  
Cleveland 2, Ohio—4000 Taylor Ave.  
Detroit 22, Mich.—10000 E. 12th Ave.

## Dole Ice-Cel Installation

... an answer to prayer

says  
BAPTIST  
PASTOR



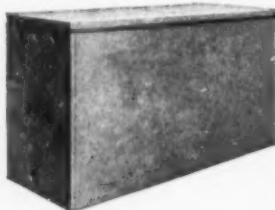

Winstanley Baptist Church of East St. Louis, Illinois, installed three DOLE Ice-Cel units in their church basement to provide air conditioning for the congregation. This installation has given year-round comfort not only to the congregation of 1,200 but to the Young People's Class of 75.

"Aside from having a well regulated temperature in our auditorium the year round," to quote Pastor Purdue, "we are enabled to keep our windows and doors closed in the summer which eliminates noise and mosquitoes."

DOLE Ice-Cels are ideal for churches, cafeterias, halls, mortuaries, offices and retail stores where the load is of short duration and Ice-Cels can be charged at off-peak hours with a smaller, less costly condensing unit.



**DOC DOLECO** says—The best way to improve church attendance is to make the congregation comfortable with Ice-Cel cooling.



Ask for Catalog D-2



**DOLE REFRIGERATING CO.**

5910 N. PULASKI ROAD, CHICAGO 30, ILL.

103 Park Avenue, New York 17

In Canada: Dole Refrigerating Products Limited  
44 Elgin Street, Brantford, Ontario

Circle No. 49 on Reader Service Card

## USEFUL LITERATURE . . .

Continued from page 63

**QUICK VALVE SELECTION** is possible with the data given in the catalog presented by Ohio Injector Co. Covering a complete line of globe, angle, gate and check valves, the 24-page catalog contains full and sectional views of each type. Of cast steel, forged steel, bronze or iron, these valves are listed in a handy indexed form.

Circle No. 120 on Reader Service Card

**ALUMINUM SOLDERING, BRAZING** techniques and instructions are highlighted in the small but informative booklet issued by All-State Welding Alloys Co., Inc. Sketched briefly are; precautions and good practices; fluxing information, and step-by-step procedures for soldering, filling, sealing, and more. This is the book for anyone having to join aluminum to aluminum or aluminum to dissimilar metals as copper, nichrome, stainless steel and the like.

Circle No. 121 on Reader Service Card

**ELEVEN SIZES** of new industrial fans and their standard wheels are described in a 12-page booklet (SA-6873) issued by Westinghouse Electric Corp.'s Sturtevant Div. This booklet covers fans which range in size from 670 to 44,000 cfm at pressures up to 16 inches mercury. To aid in the selection of a fan for high temperature applications, a table of maximum operating rpm's for various fan sizes and temperatures is also included.

Circle No. 122 on Reader Service Card

## BIG BUYS

### IN SMALL PRECISION FLOAT CONTROL VALVES

For controlling water in humidifying units, pan fillers, air conditioning equipment, evaporative coolers, and air washers. No. 51 and 52 Valves accurately maintain water lines as low as 1" deep. Float adjustable. See your jobber or write us.



No. 51



No. 52

Only 5 1/4" long overall. Non-corrosive metals throughout. Easy to install by drilling one hole. Capacity 1/2 gal. per minute at 50 lbs. pressure.

8" long overall. Same features as No. 51 Valve, except larger capacity—1 gal. per minute at 50 lbs. pressure.



#### QUICK HOOK-UP SADDLE VALVE

Fits 1/2" and 3/4" pipe. To install, just drill 3/4" hole in pipe. Outlet provided for 1/4" O.D. copper tubing.



#### HANDY NEEDLE VALVE

Ideal to control water supply to humidifiers and water valves. 3/8" I.P. male end and 1/2" O.D. copper tube size outlet.

SEE YOUR JOBBER OR WRITE

**MAID-O'-MIST, Inc.** 3216 N. PULASKI ROAD  
CHICAGO 41, ILLINOIS

Circle No. 50 on Reader Service Card

# NEW

# PRODUCTS

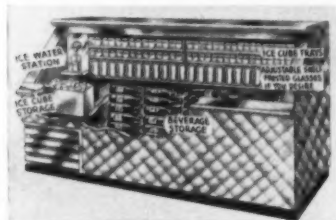
For further information on any of these products, simply circle on the postcard provided in this issue the key numbers of the items in which you are interested. Your requests will be forwarded directly to the companies concerned.

## Combination Unit

**Product:** Combination ice cube maker and beverage cooler.

**Manufacturer:** 4-Bros. Refrigerator Mfg. Co., Philadelphia.

**Features:** Deluxe model Triple A is equipped with horizontal shelf



that can be converted from drip pan to a frost glass chiller by removing shelf from top to lower bracket. Beverage glasses can be washed without drying and placed on shelf for frosting. Unit is also equipped with water station for cold water service. Both features are optional if desired at \$100; or at \$30 additional if water station feature is not desired. Case has radius corners at top and front. Roto polyethylene ice trays provide up to 150 lbs. of ice cubes. Case will dry cool up to 2000 bottles (12-oz.) per day. 3-inch insulation, water-proof tank. Available in lengths of 4, 5, 6, 7 or 8 feet; 27" wide, 39" high.

Circle No. 131 on Reader Service Card

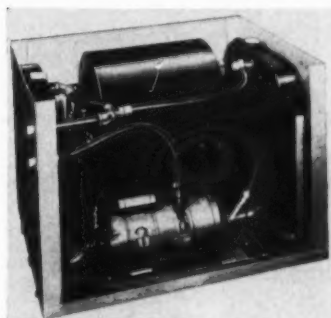
## "Water Saver" Unit

**Product:** New "Water Saver" water-cooling and recirculating unit.

**Manufacturer:** Chrysler Airtemp, Dayton, Ohio.

**Features:** Designed for use with Chrysler Airtemp 3 hp packaged residential and small-store conditioners, the "Water Saver" takes the place of the outside water supply in the air conditioner. Provides a steady flow of cooled water to air

conditioning equipment at proper operating temperatures. Sealed-in water coolant prevents scaling and corrosion, caused by mineral elements in many water sources, likely to clog pipes and reduce air conditioning efficiency. In operation, the unit receives heated water which has run through air conditioner and re-transfers the heat from water to outside air. By forcing the warm water through two automobile-type radia-



tors, while a high capacity blower fan draws outside air through the radiators, the water is quickly cooled, then returned to air conditioner in a continuous cycle. When use of indoor space is not practical, Water Saver may be mounted on store roof or in other out-of-the-way location. Besides savings from lower water usage, operation of equipment is assured regardless of local water curtailment regulations, and better temperature-humidity control is provided.

Circle No. 132 on Reader Service Card

## Window Air Conditioners

**Product:** New line of 1/2 and 3/4 hp window type room air conditioners.

**Manufacturer:** Kelvinator Div., Nash-Kelvinator Corp., Detroit.

**Features:** Model RAC-80 has

3/4 hp sealed condensing unit, a rating of 8800 Btu per hour, and moisture removal capacity of 2 1/2 pints per hour. Styled in decorator tones

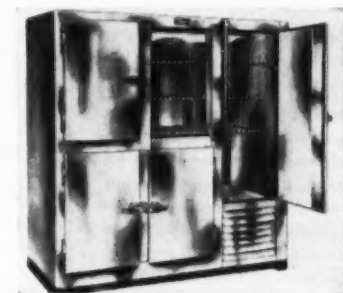


of tan and brown, it is 33 3/4" long, 26 1/2" wide and 13 3/8" high. It projects only 9 1/2" into the room, and will fit any double-hung window from 27" to 48" in opening width. Extra-wide spacer panels are available for windows more than 48" wide. Model RAC-60 has 1/2 hp sealed condensing unit, and is 24" wide by 13-3/16" high. Simple mounting frame is easily installed from inside the room. It is braced to outside wall for safety, and requires no screws either to sill or outside wall. Dials for variable speed control, fresh air control and exhaust control are on front panel.

Circle No. 133 on Reader Service Card

## Reach-In Refrigerator

**Product:** Large capacity reach-in refrigerator for storage of dairy products, meats, and other perishables.



**Manufacturer:** Glenco Refrigeration Corp., Philadelphia.

**Features:** Ceiling mounted blower coil maintains uniform high relative humidity, eliminates obstruction, and provides increased storage area. 65 cu. ft. capacity. 80" long, 32 1/2" deep, 74" high. All metal welded construction, mounted on 2 1/2" 14-gauge cold rolled steel base, bonderized and sprayed black to prevent corrosion. Exterior front



and doors of highly polished stainless steel. Ends and interior finished in natural aluminum, specially treated to prevent corrosion. Fully insulated. Self-contained, furnished with hermetically sealed condensing unit. Five doors, closing on rubber tubular gaskets to prevent air loss. Heavy duty, chromium finish hardware, with positive padlocking feature that accommodates  $\frac{5}{8}$ " padlock shackle on each door. Eleven heavy duty adjustable shelves are included.

Circle No. 134 on Reader Service Card

**"Wall Type" Air Conditioner**  
**Product:** New 1hp "Wall Type" air conditioner.

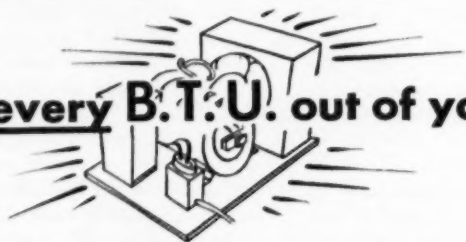
**Manufacturer:** Cavalier Air Conditioning Co., Houston, Tex.



**Features:** Mounting flush with inside wall, grille is only part of unit inside the home, completely eliminating protrusion of unit into room. Inside dimensions, grille 24½" wide, 16½" high; overall, unit 33" high, 27" wide, 15" deep. Designed especially for home builders desiring low cost air conditioning in moderate price home field. Wall unit, which can also be a window installation, is air cooled, completely self-contained requiring no plumbing, and has thermostatic control, three-speed fan, easily interchanged filters, adjustable air louvers, accessible hermetic compressor.

Circle No. 135 on Reader Service Card

**Get every B.T.U. out of your units!**



Filter out sludge, flux and carbon that coat tubing and reduce heat transfer

## INSTALL THE *New* PERMACLEAN FILTERS

Also remove rust—chips—other impurities

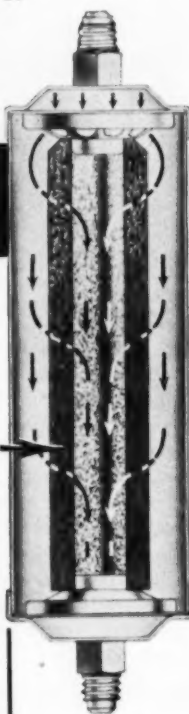
A clean system is a trouble-free system. A few dollars spent for "Permaclean" Filters protects hundreds, often thousands of dollars in labor, equipment and merchandise against troubles and failures caused by foreign matter in the system.

Use "Permaclean" Filters to run in new units—to clean up established systems—for permanent installation, to avoid future troubles, costly cleansing jobs and shutdowns. Complete line of "Permaclean" Filters now at your wholesaler.

Ask your wholesaler for Bulletin 9FS—or write us.

### DEPTH FILTRATION

Exclusive "Permaclean" Filtering Element provides large, effective surface, plus graded density that is progressively increased in direction of flow, with final filtering to ten microns and smaller.



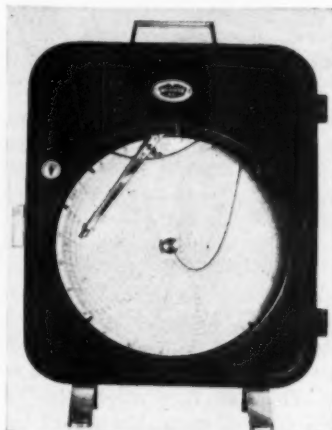
McIntire Connector Co., 257 Jefferson St., Newark 5, N.J.

### Recording Thermometers

**Product:** Line of portable recording thermometers.

**Manufacturer:** Weksler Thermometer Corp., New York City.

**Features:** Thermometers can be furnished in 8", 10" and 12" chart



sizes. These compact, rugged precision instruments can be supplied for wall or flush mounting, or portable use, and for single pen or double pen recording. Double pen recorders are used where it is desired to record more than one temperature in a single process or operation on one chart, or where because of space limitations a single chart is required for recording two temperatures in separate operations. Cast aluminum case is rust, dust, fume and moisture proof. Stainless steel movement has micrometer adjustment and is actuated by specially processed stainless steel spiral spring. Hand wound or electric chart drives can be furnished for 12-hour, 24-hour and 7-day revolu-



**DRIERS—Moisture Control Units**  
**Moisture Indicators—Filters—Strainers**

Circle No. 51 on Reader Service Card



tion. Other periods of revolution for all standard ranges can be furnished. Wall and flush mounted models equipped with stainless steel interlocked spiral armor over stainless steel capillary tubing.

Circle No. 136 on Reader Service Card

#### Water Cooler

**Product:** New "Cooler Cub" electric water cooler for office use.



**Manufacturer:** Remcor Products Co. Div. of Refrigeration Maintenance Co., Chicago.

**Features:** Measures less than 3' in height, takes up about two-thirds space of previous style coolers but has same size water capacity. Comes in two styles, Model CB-3 and CB-3C, the latter designed with roomy compartment for storing food and beverages. It will cool four one-quart bottles at a time, or more smaller bottles. Either model can be used with any size water bottle up to 5 gallons. Light weight waste receptacle has anti-splash shelf which lifts off easily for waste removal. Made of rust-resistance steel with scratch-proof opalescent gray finish.

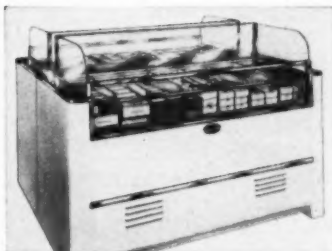
Circle No. 137 on Reader Service Card

#### Island Merchandiser

**Product:** New Island display merchandiser for frozen foods and ice cream.

**Manufacturer:** National Market Equipment Co., Royal Oak, Mich.

**Features:** Unit is offered in three sizes, 10, 15 and 21 cu. ft. Model shown is IDG-15 (15 cu. ft.). All surfaces are white baked enamel with deluxe finish for easy cleaning.



Front glass is 3-pane Thermopane. Unit is self-contained, and comes ready to plug in. Can be spotted anywhere in store for merchandising "specials" and creating additional

impulse sales. Complete information is available from the manufacturer.

Circle No. 138 on Reader Service Card

#### Window Air Conditioners

**Product:** New 1/3 and 3/4 hp window-type air conditioners.

**Manufacturer:** Frigidaire Div., General Motors Corp., Dayton, Ohio.

**Features:** Line now includes 1/3, 1/2, 3/4 and 1 hp sizes, giving

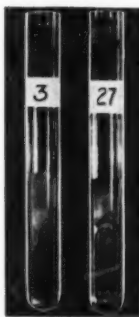
## WHY WAIT HOURS?

THAWZONE  
ACTS  
FAST



When you encounter a moisture problem, you might as well clear it up as promptly as possible. Why wait for the moisture to be picked up?

Thawzone travels with the refrigerant to every part of the system where moisture may be. The entire refrigerant charge is in contact with Thawzone after a minute or two of "on cycle".



#### CORROSION TEST

Here is another test that shows how Thawzone prevents corrosion. Both tubes contain 25cc of "Freon" 12, .025cc water, 4cc oil, and steel strips. Tube No. 3 also contains 1% Thawzone. Tube No. 27 contains 1% antifreeze instead of Thawzone. This unretouched photo shows how the metal protected by Thawzone remained free of corrosion.

Besides preventing corrosion by DESTROYING water, Thawzone neutralizes acids that promote corrosion.

## THAWZONE®

The Only Product That  
Destroys Water...  
and Goes to All of it

1. Reaches all parts of the unit.
2. Actually destroys moisture . . . not a mere antifreeze.
3. A patented invention . . . cannot be copied.
4. No pressure drop possible.
5. Not subject to oil clogging.
6. Neutralizes acids, helps prevent corrosion.
7. Helps prevent copperplating.
8. Prevents moisture trouble in new units, too.
9. Costs less. Only about 8¢ per lb. of refrigerant treated.
10. One product for all "Freon" and methyl units.
11. Only 1/4 oz. per lb. of refrigerant required.

Practically every wholesaler carries Thawzone.

Highside Chemicals Co., Clifton, N. J.

Circle No. 52 on Reader Service Card

buyer choice of models to meet his requirements. All models provide complete air conditioning function of supplying fresh air, exhausting, circulating, filtering and dehumidification. Units are similar in appearance to present models, are self-contained and easy to install. Controls are located on top of unit with 4-way adjustable louvers and vanes at top front to direct air to any part of room. Two larger models have two "Meter-Miser" refrigeration systems, smaller models one such system. Twin-unit operation allows



either one or both units to be used, depending upon outside weather conditions. On all models, blower fan can be operated by itself to pro-

vide air circulation only. Units project only 13" into room and are finished in dove gray enamel to harmonize with any color scheme.

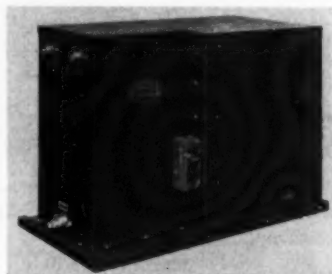
Circle No. 139 on Reader Service Card

### Remote Water Coolers

**Product:** New line of remote type water coolers, recently redesigned.

**Manufacturer:** Temprite Products Corp., Birmingham, Mich.

**Features:** Line has been redesigned for greater versatility and a wider range of water cooling applications. Compressor, condenser, cooler and all wiring are completely enclosed in metal and finished in baked gray enamel. Entire assembly rests on sturdy metal base.



Choice of models in either 3, 5 or 10 gallon capacities now available. Ten-gallon model measures only 30" long x 12" wide x 15" high. Inlet and outlet connections located on side of cooler near top, and control dial enables user to regulate outlet water temperature within control range to suit his needs. Cooler may be installed in any location where drinking water and power supply are available; can serve from one to five wall fountains or bubblers in schools, factories, on construction jobs, etc., or in restaurants, bars, cafeterias, etc. Units are also applicable to liquid cooling applications in light-duty commercial and industrial work, including cooling of light oils, some chemicals, alcohol, etc., in addition to water.

Circle No. 140 on Reader Service Card

### Cooling Towers

**Product:** 1953 line of "33" Series cooling towers.

**Manufacturer:** Havens Structural Steel Co., Kansas City, Mo.

## Refrigeration Breakdowns During Warranty Periods are Responsible for Millions of Dollars Lost Each Year by Service Contractors

**H**OW many dollars do you figure to cover the warranty period of a new installation or repair job? How many times have you figured wrong? How many nuisance calls do you get on — loose belts, overloads cutting out and overheating on peak loads? How many times have you had major breakdowns during the warranty period such as — stuck or seizing motors and compressors? How many times have you removed new expansion valves, new temperature and solenoid valves because they were not functioning properly? Have you ever said, "I'd have a darn good business if not for these repeat calls." No doubt you buy what you believe to be the best parts in the industry, such as highsides, motors, valves, lubricating oils, dehydrators and etc. You go through considerable expense to cut down the number of these calls during the warranty periods. At the end of the year when you check back on your job records and you find that your calls were cut down 5% or 10% on warranty work you feel that you have won a major victory. You have saved money, but more important is the fact that your customers are satisfied.

I say that 5% or 10% is peanuts compared to what you can really save on repeat calls. By investing the cost of a flare nut to your installation costs and repairs you will save thousands of dollars each year.

I know what "Addit 88" can do, and so do thousands of skeptics who have tried it and "given it the works." They have used it where the damage was already done and "Addit 88" proved more than it's worth by remedying conditions which were thought impossible to repair without major tear-downs. "Addit 88" is, as you know, the first oil additive marketed in the history of refrigeration for independent service contractors.

Most users of "Addit 88" are freeing compressors that are seizing, and pumps that are stuck. They are remedying situations such as sticky valves and frozen bearings on blowers and compressors. But why close the door when the horse has run out? I know that "Addit 88" can do all this and more but I did not intend to market it as a cure. I tell you that "Addit 88" is best used as a preventative measure, and you will find it business wise not to wait for trouble but to prevent it from happening. Proof? If it's proof you want, well, do as I say — add "Addit 88" to every installation and repair job . . . At the end of one year look back on your records and see the difference between the additional costs of maintenance before and after you started using "Addit 88." Maybe you will strain your eyes a little reading this, or possibly my sales talk will be good enough to convince you to start using "Addit 88." At any rate, I've shown you a method whereby you can save thousands of dollars a year, the rest is up to you. Now is your chance to make some real money on your maintenance contracts.

We know refrigeration contractors who are using "Addit 88" in washing machine repairs, in their private airplanes, automobiles and other types of machinery. This amazing product has been a long time in coming and now that it's here — don't pass up the opportunity to convince yourself. When you walk into your jobber ask him for a bottle of "Addit 88." Ask him what the other fellows are saying about it.

HENRY EHRENS, President

## SEALED UNIT PARTS CO., INC.

261 East 161st Street

New York 51, N. Y.

Circle No. 53 on Reader Service Card

**Features:** Towers now include 2, 3 and 5 ton capacity units of all welded design, which cannot be knocked down. Other sizes are knock down design as in last year's models. Wood fill has been redesigned and simplified so that it is easier to install should tower be dismantled. Rustless sheaves are now used to prolong V-belt life. A new exterior finish is designed to be more attractive and to offer better protection. Rearrangement of distribution pan and wood fill reduces possibility of water loss through fan or air inlet. Towers are made in a range of sizes to 60 tons capacity. Company says units can be dismantled and reassembled easily and quickly, giving all advantages and eliminating several disadvantages of usual knock down shipment. It is claimed these units can be dismantled and reassembled faster than a "standard" series tower of same capacity can be uncrated and assembled. Complete data available from manufacturer.

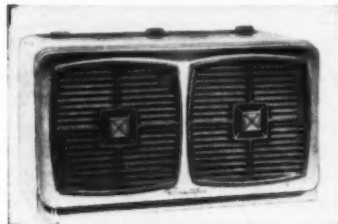
Circle No. 142 on Reader Service Card

#### Room Air Conditioner Line

**Product:** New 1953 line of room air conditioning units.

**Manufacturer:** Remington Air Conditioning Div., Remington Corp., Auburn, N. Y.

**Features:** New deluxe  $\frac{3}{4}$  hp unit and 1 hp window unit have been added to Remington line, plus several additional models to be announced later. Console line continues to feature 1 hp and  $1\frac{1}{2}$  hp capacity models. Units housed in



genuine wood cabinets in latest modern decor in dark mahogany or blonde. Cabinets easily interchangeable between units since same cabinet fits both 1 and  $1\frac{1}{2}$  hp units. The 1 hp unit is called the "Director" and the  $1\frac{1}{2}$  hp unit the "Overton". Available as water-cooled units also. Leader models are identical to deluxe units but do not have

and AIR CONDITIONING • FEBRUARY, 1953

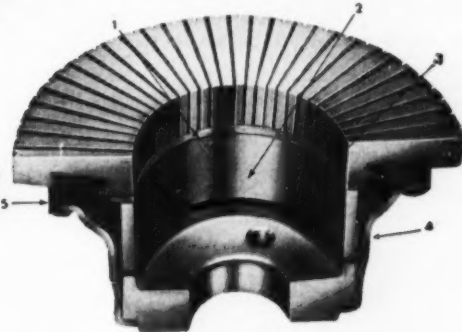
*Genuine Joe says:*

**Wagner**  
**Commutators**  
*are high speed tested*  
*...built to last*



Genuine Wagner Commutators are best to use because their rugged design provides extra strength. They're designed to withstand great centrifugal force and can be safely refaced.

**CHECK THESE FEATURES!**



1. Commutator is insulated from the short-circuiting ring with a mica washer.
2. The short-circuiting ring is made of brass.
3. Short-circuiting ring is insulated from the commutator hub by a bakelite washer that eliminates harmful shaft currents.
4. Wagner commutators have a reinforcing steel shell.
5. The entire assembly is molded in high impact phenolic molding compound.

Do you have Wagner's Catalog MU-40 and Fast-Moving Parts Bulletin MU-122? If not, write for your copies today. Every repair shop can use these helps.

MS53-1

**WAGNER ELECTRIC CORPORATION**  
6442 Plymouth Ave., St. Louis 14, Mo., U. S. A.

MOTORS • BEARINGS • STANDARD ROTORS  
BRUSHES • CAPACITORS • COMMUTATORS

**OVER 750 AUTHORIZED SERVICE STATIONS  
OR PARTS DISTRIBUTORS**

Circle No. 54 on Reader Service Card



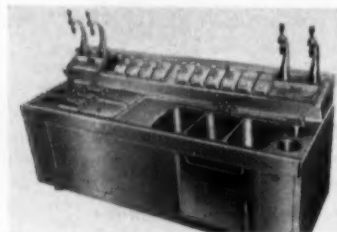
wood cabinets. These are finished in chestnut brown baked-on enamel on rust-proofed furniture steel. Leader models are adaptable to use within the room or to remote location using ductwork. "Climate Compensator" on console units adapts unit, at flip of a switch, to variable operation for extra-hot or extra-dry climates. "Positive ventilation" and "variable velocity" are additional console features. Heating unit of 7000 Btu/hour is available if desired on console units. The five window type conditioners have capacities of 1/3, 1/2, 3/4 and 1 hp. Master models have 4-position control to provide filtering, ventilation, circulation and noise elimination with or without cooling and dehumidification. Additional control knob operates damper for ventilation or exhaust. Deluxe models also have "Climate Compensator" feature, single master control allows hi-low fan choice for ventilation only. Exterior finish is Mission Grey with Sahara Beige twin plastic grilles. Easy filter removal.

Circle No. 143 on Reader Service Card

#### **Bobtail Fountain**

**Product:** Completely redesigned 7-foot bobtail fountain unit.

**Manufacturer:** Dunhill Soda Fountain Corp., Brooklyn, N. Y.



**Features:** Body is constructed of 16 gauge zinc coated steel with all sides and bottom heavily reinforced with steel structural members. Front facing is stainless steel. Complete interior and exterior back, ends and bottom panels are sprayed with thick coating of synthetic aluminum. All joints electric welded for water-tight seal; corners rounded to simplify cleaning. Bottle storage and syrup compartments individually refrigerated with dry, direct expansion systems, coils completely concealed behind lining. Temperatures controlled by suction pressure regulating valves.

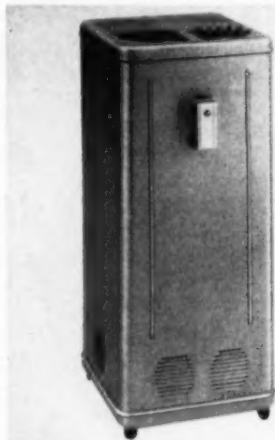
Circle No. 144 on Reader Service Card

#### **Dehumidifier**

**Product:** New "Aqua-Sorber" dehumidifier.

**Manufacturer:** Walton Laboratories, Irving, N. J.

**Features:** Includes automatic control which is said to save on power consumption, since it is actuated by moisture content of the atmosphere and operates only when necessary rather than at timed intervals. Other features include maximum air flow,



easy removal of water container and hose connection readily accessible for permanent automatic water removal through drain piping. All models have "on-off" switch and are available with or without automatic control. Uses 1/5 hp motor. Compactly designed, with functional exterior.

Circle No. 145 on Reader Service Card

#### **Reach-In Refrigerator**

**Product:** New Model S-40 reach-in refrigerator.

**Manufacturer:** Jordon Refrigerator Co., Philadelphia.

**Features:** Model S-40 has 1/3 hp sealed condensing unit, "Jord-O-Matic" ceiling mounted blower coil designed for proper temperature and humidity control. Available with either 7 heavy duty wire shelves (S-40JFC) or with 4 shelves and 2 rows of meat hooks behind the long door (S-40H). Condensing unit carries 5-year warranty. Refrigerator is of welded steel construction, with seams and joints moisture proofed. Fiberglass insulation. Interior of polished aluminum, exterior of polished stainless steel. Heavy duty chrome hardware, with padlock provision in door handles if desired.

Circle No. 146 on Reader Service Card

#### **Cooling Tower**

**Product:** New type forced draft cooling tower for use with residential air conditioning compressors.

**Manufacturer:** Binks Mfg. Co., Chicago.

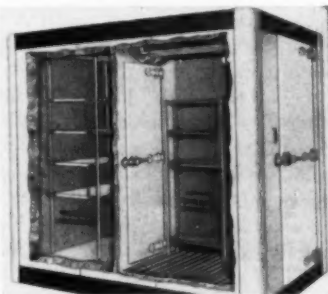
**Features:** Pilot model, just developed, is planned for extra-quiet operation; sound level will not exceed air conditioning unit proper. Tower is compact and can be installed outside or in basement, utility room, or garage as part of cooling equipment. Company believes the new product will fill a need in moderate price home field, more and more of which are being fitted with year 'round air conditioning. Designed for use with water-cooled condensing unit. Pilot model will be displayed for first time at Air Conditioning Exposition in Chicago, Jan. 26-30, 1953. Information is also available direct from the company.

Circle No. 147 on Reader Service Card

#### **Combination Refrigerator**

**Product:** Combination low temperature and normal temperature storage refrigerator.

**Manufacturer:** C. Schmidt Co., Cincinnati.



**Features:** Designed for use by food merchants who need both types of refrigeration. Low temperature compartment is refrigerated by horizontal plate stands which can be used as shelves for contact freezing. Normal temperature section is refrigerated by patented "Filter-Flo" coil which is said to eliminate strong drafts and control bacteria growth. Cabinet is of pre-fabricated sections. Panels 2'4" wide allow wide variation in sizes. Seven inches of insulation in freezer section, 5" in normal temperature section. Bulletin TT, available from company, describes unit more fully.

Circle No. 148 on Reader Service Card



### Window Air Conditioner

**Product:** Two new window-type room air conditioners.

**Manufacturer:** Servel, Inc., Evansville, Ind.

**Features:** Available in  $\frac{3}{4}$  hp and 1 hp capacities, units have sin-



gle dial which controls entire operation, and choice of mahogany or blonde exterior finish. One-piece interior cabinet which rests inside on the window sill is of high-impact polystyrene plastic. Since there is no metal to provide a sounding board, quieter operation is provided. Grill through which conditioned air flows into room is in four sections, each of which enables user to chose any directional flow of air desired—up, down, to left or right, or in any combination. Thermostatic control is standard in 1 hp model, optional in  $\frac{3}{4}$  hp unit. Filter is easily accessible through return air vent and can be replaced without disturbing any other part of unit. Five-year warranty is provided.

Circle No. 149 on Reader Service Card

### Low-Temperature Cabinet

**Product:** New 17 cu. ft. low temperature cabinet for merchandising of ice cream, frozen foods and frozen juices.

**Manufacturer:** Frigidaire Division, General Motors Corp., Dayton, Ohio.

**Features:** "Roll-A View" glass tops are constructed of triple pane Thermopane glass, providing clear view of interior at all times, and have stainless steel frames which ride smoothly on recessed tracks. New cabinet is similar in design and construction to present 11.2 cu. ft. model. Five thermal dividers provide six storage sections if required. Other features include all-steel cabinet: 4"

insulation; one-piece stainless steel top; convenient compressor compartment; cold control and recessed, scuff-proof base. Powered by  $\frac{1}{2}$  hp compressor. Finish in white enamel.

Circle No. 150 on Reader Service Card



### Flexible Plastic Tubing

**Product:** Tygon flexible plastic tubing with triple wire stainless steel outer braid.

**Manufacturer:** U.S. Stoneware Co., Akron, Ohio.

**Features:** Tygon tubing absorbs vibration more readily and does not crack, leak or break under working pressures up to and including 300 psi. Because of flexibility, less footage is

"Brother, you can't go wrong on these tools."

"Ask any mechanic who is a mechanic about Bonney tools. You'll get the straight dope on why they're tops.

Believe me, you get the *best* tools at standard prices. I *know*—I sure check price.

My tool kit is full of Bonney knuckle-savers. They have a 'feel' that makes you sure of first class work. That means more dough in the pay envelope.

Another thing! If you're short on cash, take a look at a BON-E-CON\* tool. They carry the standard Bonney guarantee."

**BONNEY TOOLS**

\* The new Bonney economy-priced line

**BONNEY FORCE & TOOL WORKS • ALLENTOWN • PENNSYLVANIA**  
Circle No. 56 on Reader Service Card



200 Series, 7-day calendar dial time switches provide individual program settings for each day in week.

for accurate  
dependable  
defrosting time  
switches

specify  
**paragon**

Dependable, accurate defrosting is vital to good performance. That's why, for original equipment or for replacement, growing numbers of top-flight designers and service engineers demand Paragon defrosting time switches. That's why 96% of the commercial refrigeration manufacturers using automatic defrosting specify Paragon as standard equipment.

300-MB Series Time Switches for compressor shut-down, electric heater defrosting, hot gas or reverse cycle applications.

TD-360 Beverage Cooler "de-frost-it" can be used with all makes and most models of dry type coolers — helps maintain lower temperatures.

Attic & Window Fan Timers

Dehumidifier Timer

"de-frost-it"

**PARAGON  
ELECTRIC COMPANY**  
TWO RIVERS, WISCONSIN  
World's largest exclusive  
manufacturer of time controls

Time/Pressure Switches

Water Spray Controls

## SAVE MAN HOURS USE MIRACLE ANCHOR METHOD



Ford Motor Corporation, Dynamometer Building, Dearborn, Michigan: Application of Rock Wool Batts by use of Miracle Spindle Anchors, bonded with Miracle Adhesive.

To attach insulation to ceilings and walls use Miracle Anchors and Adhesives. Eliminates drilling or welding.

**FREE:** Send for colorful informative brochure on Miracle Anchors, which details savings in man hours and costs by use of the Miracle Anchor Method.



**MIRACLE ADHESIVES CORPORATION**

214 EAST 58RD STREET, NEW YORK 22, N. Y.  
and all Principal Cities and Canada

Circle No. 55 on Reader Service Card

Circle No. 63 on Reader Service Card

FEBRUARY, 1953 • COMMERCIAL REFRIGERATION

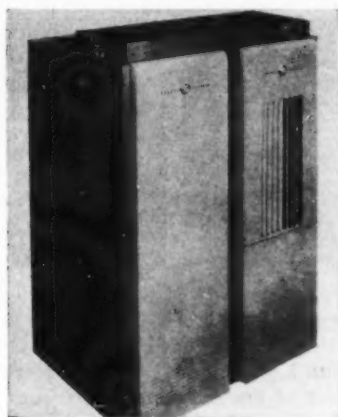
required than with rigid tubing, fewer fittings are needed, and no special tools are required for installation. Tubing is translucent, allowing visual inspection of flow and simplifying cleaning. Stocked in two sizes ( $\frac{1}{4}$ " ID and  $\frac{3}{8}$ " ID); available in six standard formulations and in running or fitted lengths. All fittings stainless steel. The  $\frac{1}{4}$ " ID fittings can be field applied. The  $\frac{3}{8}$ " ID crimped fittings are factory applied. Other sizes of tubing and fittings are available on special order. Recommended for high pressure transmission of any liquid, gas or semi-solid; particularly effective in handling of highly corrosive materials.

Circle No. 151 on Reader Service Card

#### Residential Air Conditioners

**Product:** Completely new line of residential year-round air conditioning equipment, plus restyled and redesigned home cooling units.

**Manufacturer:** Home Heating and Cooling Dept., General Electric Co., Bloomfield, N. J.



**Features:** New line offers over 190 models in wide range of heating and cooling capacities to fit year-around indoor climate requirements of all sections of country and sizes of houses. Units are completely self-contained packaged units and are finished in attractive two-tone gray that blends in with any color or decorating scheme. Compact size is a leading feature. Smallest unit takes up only 8.3 sq. ft. floor space, and largest occupies 15 sq. ft. Each model adaptable for either gas or oil as heating source, and has factory-sealed refrigeration system based on newly developed hermetic compressor, carrying 5-year war-

ranty. Year-round unit automatically cools when it is hot, dehumidifies when it is muggy, and heats when it is cool. Also filters and circulates air throughout year. Price expected to run between \$800 and \$1,200 more than for good forced warm air heating system, depending on house size, location and installation problems. Restyled and redesigned home cooling unit line now includes 5-ton unit in addition to previous 2 and 3-ton models. These units are offered for use in existing homes with suitable forced warm

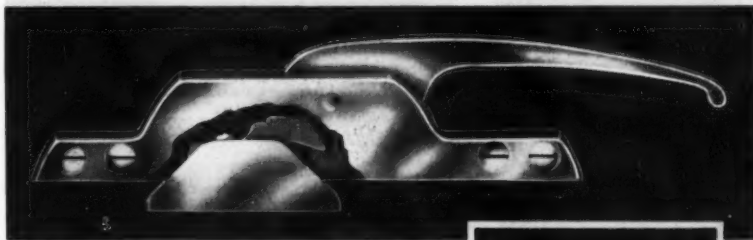
air heating systems. They are only 55" high and 30" deep; 2 and 3 ton units are 21" wide, while 5 ton unit is 25" wide.

Circle No. 152 on Reader Service Card

#### TO MEET APRIL 10-11

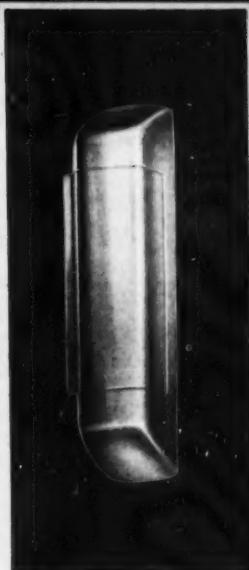
The annual convention of the South Carolina Association of Plumbing and Heating Contractors will be held at the Poinsett Hotel, Greenville, on April 10 and 11 of this year, it has been announced by A. R. Heyward, secretary.

## Grand Rapids Brass announces NEW edgemount LOCKS, STRIKES AND HINGES



The NEW Edgemount concealed strike is flush-mounted on the surface of the cabinet . . . no mortising is required . . . no cutting away of metal. The Edgemount is designed for all commercial refrigerators. Hinge has Oilite bushings for permanent lubrication, long wear. The Edgemount lock features the "When it trips—it grips" action.

Write for complete details.



## Grand Rapids Brass Company

GRAND RAPIDS, MICHIGAN

## ABOUT PEOPLE . . .

*Continued from page 41*

who since 1950 has been sales manager with direct supervision of the company's distributing organization. In his new capacity, Twist will assume overall charge of zone sales manager activities as well. He joined Sherer in 1946 and became assistant sales manager in 1949. **Robert O. Scheible** has been transferred to sales staff duties at the home office. Since joining

Sherer in 1949, he had been sales representative in the Marshall, Mich., territory.

**K. M. Nelson** has been appointed division manager of industrial control sales for Cutler-Hammer, Inc. He will have sales responsibility for a segment of the company's industrial control line. He joined the firm's engineering department in 1942 and was transferred in 1946 to the resale sales division as an industry specialist.

**C. Frederick Moore**, a mechanical engineer formerly a designer of electrical equipment, has been appointed field sales representative of the Fiber Glass Div. of Libby-Owens-Ford Glass Co. with headquarters in Philadelphia. Moore will report directly to A. K. McClay, district sales manager in New York. Moore worked with Sharp & Dohme as a junior engineer and for the last two years has been with Westinghouse Electric Corp.

The appointment of **Millard Mayer** as chairman of the board and of **Chester K. Litman** as president has been announced by Koch Refrigerators, Inc., North Kansas City, Mo. Mayer was formerly president of Koch, and Litman vice



M. Mayer



C. K. Litman



R. M. Bell

president. **Robert M. Bell** is now vice president. Mayer, who has been with Koch since 1917, is also president of the Commercial Refrigerator Manufacturers Association, which comprises more than 80% of the total industry production. Litman, a Harvard graduate and a registered professional engineer, is a member of ASRE. He has served Koch 17 years in distributor sales, production engineering and plant production. Bell has been with Koch for 18 years. Koch has been in business since 1883, and has played a leading role in the development of refrigerated equipment from the days of the "ice counter" to modern electrical self-service units. The company makes a complete line of refrigerated display and storage equipment for commercial use.

## For Recognized Quality - Extra Gallons

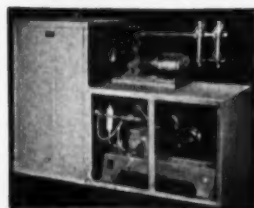
# Sell Your Condensing Unit - Filtrine Water Coolers



Mess Hall-Cafeteria Cooler



Photographic-X-ray Cooler



Typical "Packaged"  
Circulating Chilled Water System

Promote your own condensing unit sales with Filtrine's 20-year-life construction...high capacity... Super Storage... more than 40 years' dependability.

### COOLERS FOR MESS HALLS - CAFETERIAS

Conform with Fed. Spec. 00-C-566b

### COOLERS FOR X-RAY & PHOTOGRAPHY

### PACKAGED CIRCULATING CHILLED WATER SYSTEMS

### REMOTE COOLERS FOR ALL USES

Sell your condensing unit with Filtrine Stainless Steel or Duco finished cabinets, equipped to suit with top/side shelves, bubblers, glass-fillers. Can be Taste-Master equipped to remove chlorine, rust, sediment from water.



Taste-Master

Sell your condensing unit with Filtrine models repeatedly named by V.A., Signal Corps, Air Force, etc. for X-ray, and photo-labs. Under counter design and floor-mounted models with stainless steel work-table top. Filters (extra) to prevent scratched and pin-holed negatives.

Sell your condensing unit! Systems for drinking or processing water—completely packaged with pump, controls, your condensing unit factory installed. Capacities 5—400 g.p.h.; storage 5—150 gals. Filters and Rectifier-Dechlorinators (extra) to insure taste-free, sparkling water.



Remote Model Coolers

Sell your condensing unit with remote models for new and replacement jobs—all applications. Capacities 10—1000 g.p.h.; storage 7—300 gals. Filters, Rectifier-Dechlorinators available for all sizes.



Write for Catalog and Specification Guide

FILTRINE MANUFACTURING COMPANY • BROOKLYN 5 • N. Y.

"Water Coolers and Filters for 40 Years"

Circle No. 59 on Reader Service Card



**L. K. Altman** of Atlanta and **O. D. Altman** of North Miami have



L. K. Altman

been appointed refrigeration products sales representatives for McQuay, Inc. in the southeastern territory. **R. H. Crowe** has been appointed refrigeration products sales representative



O. D. Altman



R. H. Crowe

of the firm in the Texas territory. For the past several years L. K. Altman has been a salesman for Bowan Refrigeration Supply, Inc.; O. D. Altman has been active in the refrigeration field in the southeast for sixteen years, and Crowe was manager of the refrigeration department of the N. O. Nelson Co. for the past seven years.

**David E. Feinberg** has been named general manager of United



States Air Conditioning Corp. He succeeds his father, A. A. Feinberg, who died Oct. 7th. The younger Feinberg, a vice president of the Corporation since May,

1951, has also served as sales manager of the company's refrigeration division and as co-ordinator of its defense production activities. He has been associated with the firm since 1940.

**Andrew F. Wilson** has been named public relations director for Kelvinator Div., Nash-Kelvinator Corp., and **Robert C. Boelio** has been appointed as his assistant. Wil-

son, a former newspaper and wire service reporter, has been a member of the firm's public relations staff since 1948. Boelio comes to Kelvinator from his post as night editor of the Associated Press' Detroit bureau.

**Paul B. Wishart** has been appointed to the newly created position of general manager of Minneapolis-Honeywell Regulator Co. and also was elected to the board of

directors of the company. Wishart will handle all divisions of the firm which previously reported directly to the president or the executive vice presidents. He joined Honeywell in 1942.

**R. D. Bartlett**, recently chief engineer of the refrigerated cabinet division of Anheuser-Busch, Inc., has been appointed to a similar position with Ace Cabinet Corp. of New Bedford, Mass.

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## SCHOOL'S HEAT LOSS CUT BY PERIMETER INSULATION

Heat loss is reduced and children's comfort is assured through extensive use of Fiberglas perimeter insulation in Toledo's new \$600,000 Grove Patterson School.

Following the general trend toward basementless school construction, the building's reinforced concrete foundation is enclosed completely in insulation.

Only the fan, storage and boiler rooms, which cover about 3,500 sq. ft., are underground in this 12 class-

room building. The remaining 22,500 sq. ft. of floor space are protected against cold and moisture by 2,600 sq. ft. of the Fiberglas insulation, 1" thick.

The asphalt-enclosed Fiberglas boards were installed vertically to a depth of 3 ft. around the concrete.

Keeping centers of the floors warm in a basementless structure is no particular problem to a heating man, but preventing heat loss at the slab edges is particularly important in school buildings where children's all-day comfort is involved. That is why

effective use of perimeter insulation is playing an increasingly important role.

Heat loss occurs when foundation walls and edges of concrete floor slabs are exposed to temperatures colder than the interior. The heat ordinarily is carried away from the inside to the cooler air or ground adjoining the foundation. By using perimeter insulation between the foundation and the slab, the path of heat loss is blocked. Floors thus remain warmer than they would in a building without this type insulation; heating plant costs and fuel bills are reduced.

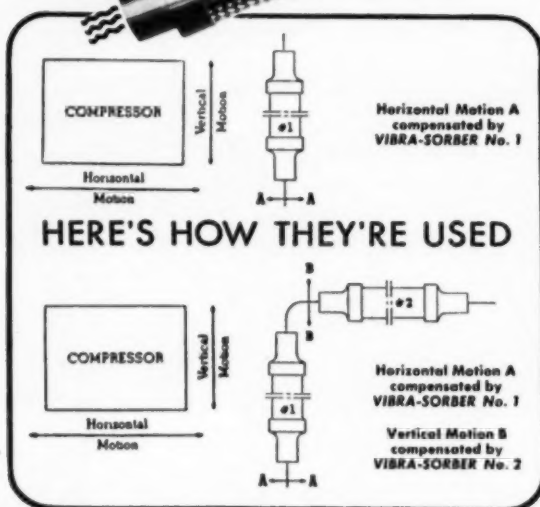
The estimated reduction of heat loss in Grove Patterson School, because of use of Fiberglas perimeter insulation, will be from 10 to 15%, the heating designers say.

The kindergarten room of Grove Patterson School is the only class-

# Flexon VIBRA-SORBERS

*the preferred method of isolating compressor*

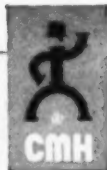
## VIBRATION



FLEXON VIBRA-SORBERS installed in lines to and from compressors help keep objectionable noise out of the system... reduce damage to fixed piping or tubing resulting from vibration. Whether it's a small room air conditioner or a huge commercial refrigerating plant, VIBRA-SORBERS provide the dependable vibration absorption so necessary to the long life and good service of the plant.

VIBRA-SORBERS are standard lengths of metal braid covered sections of corrugated bronze or steel hose. They are available in standard sizes from 1/8" through 4", I.D. (larger sizes also available). Furnished with straight extended tube ends or threaded fittings; bent extended tube ends for angle installations are also available.

Write for data sheets giving full information on VIBRA-SORBERS.



Flexon identifies CMH products that have served industry for over 50 years.

## CHICAGO METAL HOSE Division

Flexonics Corporation

1321 S. Third Avenue • Maywood, Illinois

Manufacturers of flexible metal hose and conduit, expansion joints, metallic bellows and assemblies of these components. In Canada: Flexonics Corporation of Canada, Ltd., Brampton, Ontario

Circle No. 61 on Reader Service Card

## AS WE SEE '53...

A. T. Tsoumas, vice president, Eskimo Cooler Corp.

"We look forward to 1953 as a banner year for the refrigeration industry. We have already made arrangements to increase our production by more than 25% to take care of this expected increase."

room which presents no heat loss problem. Because the kindergarten children sit and lie on the floor a great deal, a radiant heating system was installed in the floor of this room.

In addition to the effective use of perimeter insulation, the school has a completely modern heating system.

All of the Fiberglas-insulated ducts and the piping for hot and cold water are located in the plenum areas of the suspended ceilings.

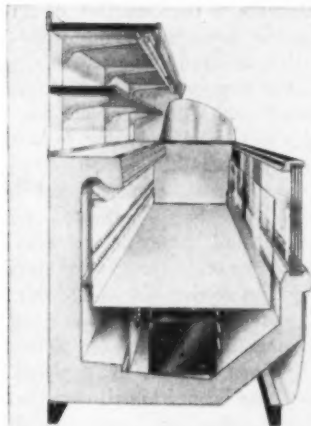
Heated air is sent through the ducts and returns through the suspended ceilings of the corridors. This return air method saves duct work.

The acoustical tile ceilings in the school provide effective sound control, have high light reflection and insulating qualities, are non-combustible and attractive. The tile was adhered to rock lath, suspended by means of a standard metal channel system.

Forced hot water heat and fin tube radiation are used throughout the building except in the kindergarten room.

Thermostats are located in all rooms, thus controlling heat independently in each classroom.

## NEW DEFROST FEATURE



**FAST WATER DEFROSTING** in the new Blizzard Super type of low temperature self-service case recently marketed by Weber Showcase & Fixture Co. is provided by means of a Recold water defrost low temperature coil installed in the bottom of the case. Entire defrosting cycle in the new case is said to be accomplished in less than 10 minutes time, with no appreciable rise in temperature in the stored products. Defrosting is accomplished by spraying ordinary tap water over the coils. The water, brought in through an inlet at the front of the case, flows into a spray pan above the coils. At a predetermined time the compressor and fans are automatically turned off and the water is turned on for about eight minutes, to wash the frost off the coils. After the coils have drained, the compressor and fan are again turned on, completing the cycle. Two fans, located beneath the commodity compartment, pull the refrigerated air through the coil and force it over and around the merchandise to insure complete protection. A by-pass tube in the case allows water in the inlet pipe to drain at the end of the defrost cycle, preventing freezing of inlet water. A drain located at the front center of the case has provision for optional routing of water to the back or to either end of the case.

## PRODUCT ENGINEERS PROMOTED BY YORK

A number of York Corp.'s research and development engineers have been elevated to newly created positions of engineering managers in a move to streamline the development of new products in the air conditioning and refrigeration industry.

The new engineering managers and the products under their supervision are:

S. B. Nissley, reciprocating compressors; R. D. Blum, central station

air conditioning; R. A. Chadburn, heat exchange equipment; J. H. Anderson, Turbo Compressors; S. P. Soling, engineered applications; P. B. Moore, single room air conditioners; A. E. Diehl, self-contained air conditioners; H. A. Brysselboud, ice makers; P. G. Thayer, hermetic compressors.

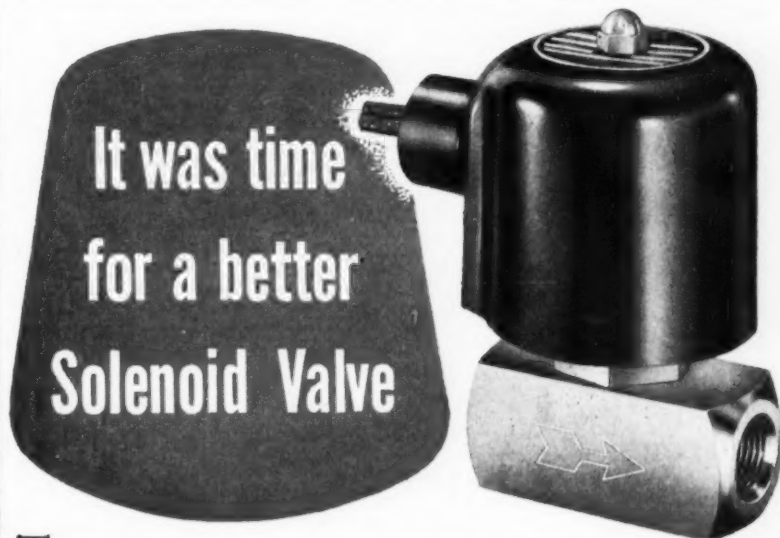
Rodney F. Lauer continues as vice president in charge of engineering and research with J. C. Consley as chief engineer.

B. E. James, formerly a vice president with McQuay, Inc., has been

named assistant chief engineer in charge of packaged products and the smaller systems sold through distributors and manufacturers.

J. R. Chamberlain is assistant chief engineer in charge of industrial products sold through the firm's direct sales outlets. F. J. Allen has been appointed manager of the corporation's engineering and chemical laboratories. J. P. Hare continues as chief draftsman.

**BUY FROM YOUR REFRIGERATION WHOLESALER**



The day Jas. P. Marsh Corporation acquired the Electrimatic line of regulators and control valves was the beginning of higher quality construction and greater dependability in products of this type.

Today Marsh-Electrimatic products are setting their own standards. An excellent example of this is the new 60, 65 and 67 Series of Marsh-Electrimatic Valves. Notice, for instance, the bodies machined from solid bar brass stock which means greatly added strength safeguarding against distortion when installing. And the machined bodies are simply outward evidence of the quality and precision found in every detail: Moisture and frost proof coils, specially impregnated and liberally wound; remarkably tight seating valves with both seat and needle non-magnetic to prevent accumulations that often prevent proper seating in valves not so constructed.

All of the 60, 65 and 67 series are Underwriters' approved and rated. Note the range of these valves briefly covered opposite. Ask for complete details.

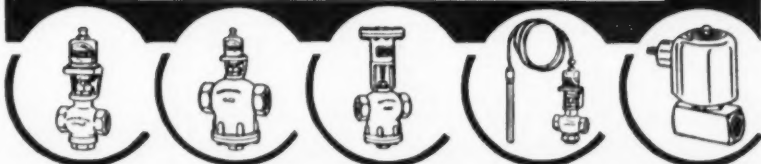
**MARSH INSTRUMENT CO.**

Sales affiliate of Jas. P. Marsh Corporation  
Dept. P, Skokie, Ill.

Marsh Electrimatic 60 Series valves are direct acting with 3/16" orifice; maximum pressure 150 psi. The 65 and 67 Series are pilot operated; maximum pressure, 200 psi. 65 Series has 3/8" orifice; 67 Series, 1/2" orifice for large capacity requirements. All Series have 1/2" conduit leads 24" long.

★ The Marsh-built family of Electrimatic Controls also includes water regulators in a full range of types. Ask for facts.

# MARSH-Electrimatic



Circle No. 62 on Reader Service Card



## CLEANING COILS . . .

Continued from page 33

fill the barrel with fresh water. By starting the pump, flush the coil completely. Then drain the system, disconnect the pump and the barrel, and reconnect the normal piping.

It is also possible to remove scale from copper tubes with a 25% solution of commercial hydrochloric (muriatic) acid in water. Tubes, of course, should be thoroughly flushed with water after the acid solution is used.

Always have a pail of neutralizing solution available when using any of these commercial descalents. Should the descalent come in contact with the skin, cover the affected area with the neutralizer quickly.

The use of the above described descaling method is limited to heating coils of all descriptions and to hot water cooling coils. The descaling process must never be used with direct expansion coils because damage can easily result. As a matter of fact, the refrigerant contains no foreign matter and is in

itself an excellent cleaner.

Even though the forced circulation method of cleaning coils is generally accepted as the best method, there are times when the gravity method of introducing the descalent must be used. In most cases, however, the gravity method is too slow for anyone actively engaged in the

### AS WE SEE '53 . . .

Roger D. Jacobs, vice president in charge of sales, Warren Co.:

"It is our opinion that easing of government controls will encourage the building of more new stores in 1953 (providing the war situation does not get worse), and that the segment of the refrigeration industry in which we are a member will have a slightly larger volume than in 1952, and 1952 was pretty good."

business of cleaning coils. If the gravity method must be employed, here is one that can be used effectively, as shown in Fig. 2.

Disconnect coil supply and return lines, close valves 2, 5 and 3. Drain all water from coil out drain valve 4. Close valves 1, 2 and 4 and open

valves 5 and 3. Then introduce into the coil by gravity, according to the diagram, a cold solution of an acid acting descalent having a concentration of 15 to 20 percent.

Use the same type of acid action descalent and inhibitor as you would use if employing the forced circulation method.

In many instances where heavy deposits have been permitted to form in the coil, it may be necessary to utilize several charges of the descalent in order to completely dissolve all scale formations.

Cleaning should be completed after the last charge of depleted descalent has been drained from the unit by flushing with water and after the coil has been neutralized with any of several alkaline solutions made available by the manufacturers of the descalents.

To determine when the coil has been thoroughly cleaned and descaled, use the titration test kit furnished by the manufacturer of the descalent, changing the charge as needed.

To remove slime formed by algae

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For Extra Capacity Extra Sales

- Bottom shelf holds 108 quarts of milk
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MODEL GD-2956

Designed to S-E-L-L dairy products for BOTH super market or corner grocery. Brilliant fluorescent lighting floods all three levels. BIG full-view thermopane window. Wider, lower service opening. Time clock AUTOMATICALLY defrosts coils during early morning hours. Blower and large capacity cooling coil eliminate spoilage LOSS due to faulty uneven temperature.

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in time and labor . . . with

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**X-PANDO  
PIPE-JOINT  
COMPOUND**

**X-PANDO  
CAUXEAL**

Contractors, Installation and Service Men in the refrigerant field; industry; government; the armed forces—all agree that X-Pando Pipe-Joint Compound is far superior to litharge and glycerine for freon, ammonia, brine and all refrigerant liquids and gases.

An X-Pando application costs less, goes much further; is less brittle and is easy to take apart. It ends leaks. It corrects thread imperfections; withstands deflection, vibration, and extreme temperature changes.

X-Pando is the recommended exclusive compound STANDARD in the refrigeration field. It is the ONLY compound that expands as its sets. You need only this ONE FORMULA for all jobs.

- that wonderful refrigerant Sealer that's applied like putty, but is better than putty. Always remains pliable — yet it seals indefinitely.
- Cauxeal is the perfect seal for ducts, conduits, air-conditioning units and innumerable other uses. It's simple, fast, economical, needing no special preparation. It's watertight, fume-proof, vermin-proof and acid-resistant. It sticks to anything!
- You can't waste Cauxeal. Simply put all excess Cauxeal back into the container for re-use at any time. Store it anywhere — it'll always remain "workable."

IF IT'S WORTH INSTALLING—IT'S WORTH SEALING RIGHT—WITH X-PANDO PIPE-JOINT COMPOUND AND CAUXEAL.

X-Pando Products are always sold on a Money-Back Guarantee! Available at your local Refrigeration Wholesaler or your Industrial Supply House. Nationally distributed by York Corporation through their authorized outlets.

**X-PANDO CORPORATION**

Manufacturers of Quality Industrial Products for over 25 Years  
43-15—36th STREET, LONG ISLAND CITY 1, NEW YORK

Circle No. 31 on Reader Service Card



and similar substances, the following procedure has been used effectively:

Employ the forced circulation method described before, using in the barrel any of several detergents made available by cleaning compound manufacturers. For best results, dissolve the detergent in 150 F water.

#### Check For Leaks

If the coil being cleaned is the condenser of a refrigeration system, cold or lukewarm water should be used, since hot water will raise the head pressure in the refrigeration lines to a dangerously high degree. After cleaning is completed, the water side (or tubes) should be checked for Freon leaks with a halide leak detector.

Allow the pump enough operating time to permit the cleaning solution to soften and loosen the slime and soil from all surfaces. Then turn off the pump, drain the dirty solution from the barrel, pump and coil. Refill the barrel with fresh water and flush the coil by starting the pump. Next, disconnect the system and allow to drain completely.

Unfortunately, in many instances, the forced circulation method will not provide enough velocity to the solution to dislodge the mud and slime. The only alternative left is to remove the headers and drive out the slime and mud mechanically.

#### Clean Coils Periodically

Occasionally, oil will collect in heating coils to such an extent that cleaning is necessary. This occurs most frequently in coils using exhaust steam. To remove oil from coils, use a detergent or oil solvent solution and methods similar to the forced circulation method described above.

This solution should be moved through the coil for several hours. For best results, the solution in the system should be kept at a temperature of 180 F. After completely removing all of the oil, flush the coil with water.

Regular coil inspection and periodic cleaning, both internally and externally, will insure full heat transfer capacity and long coil life. Cleaning is not difficult if foreign matter is not allowed to collect over long periods.

#### NEW FILM ON STYROFOAM DEVELOPED BY DOW

A new educational film on the use of Styrofoam for low-temperature insulation has been developed by The Dow Chemical Co.

The 18-minute black and white film is designed for use by distributors, contractors, engineers and architects. Prepared for Dow by The Jam Handy Organization, a leading industrial film producer, the movie presents the properties, principles of proper installation, how to

work Styrofoam on conventional fabricating equipment, typical applications, and correct finishing technique for the material.

Among the advantages of Styrofoam pointed out in the film are the low thermal conductivity of this expanded polystyrene plastic, its structural strength, water-resistance and light weight.

Arrangements for the film, which will be available in the near future, may be made through the plastics sales department, the Dow Chemical Co., Midland, Mich.



#### in the new pour spout can . . .

- Easier to pour—less chance of spilling.
- Minimum pick-up of moisture when can is open.
- Positive seal when cap is replaced.
- Easier to open—easier to close.

PA-100, Davison's refrigeration grade silica gel, definitely has more capacity than any other commercial drying agent. And PA-100, being completely inert, cannot cause corrosion . . . actually helps prevent it by removing corrosive compounds from the system. There is no danger of PA-100 dusting, caking, deliquescent, or causing refrigerant channeling and other undesirable action.

Get PA-100 in the new easy to use pour spout can today. You will be getting the finest in refrigerant drying agents in the easiest and safest to use container.

Progress through Chemistry

**THE DAVISON CHEMICAL CORPORATION**

Baltimore 3, Maryland

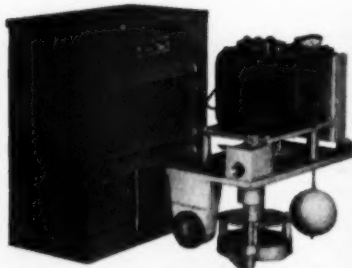
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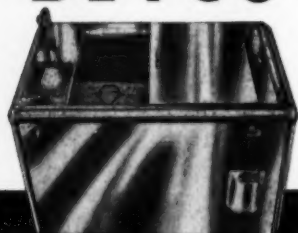


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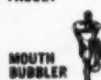
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CAN FIT INTO YOUR LINE  
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80

## DRAWING ACCOUNT . . .

*Continued from page 37*

budgeted. Most obvious is to estimate conservatively the year's net earnings. Then take substantially less than this figure and divide by 12 months or 52 weeks.

This, then, becomes the monthly or weekly draw, regardless of net earning fluctuations from month to month. In months of high earnings, the personal drawing may be only 40 or 50% of the amount available to ownership. In slack months, the personal drawing may exceed the

**E**MPLOYEES of Halstead & Mitchell, Inc. and Remco Corp. gave up their Thanksgiving vacations to help a family that lost two children in an explosion just before the holiday.

They worked an eight-hour day and donated their gross pay to a fund for the benefit of the family of Earl Lambert, employed by Halstead & Mitchell as a welder. Both Zelienople, Pa. firms matched their employees' donations.

Byron Halstead, senior partner of Halstead & Mitchell, said the fund, set up and administered by the employees, would be used to pay hospital and funeral expenses and to repair the Lambert home. The coal stove explosion, which took the lives of the youngsters, also injured two other children and Mr. and Mrs. Lambert.

net earnings. But, over the year, the total in personal drawings will be substantially less than what is available.

This puts the contractor's personal needs on an even keel. He is not under pressure to adjust his personal needs downward as the slack periods hit him. It reduces his outside worries, and right at a time when he needs to use all of his energies in the business.

A modification of the foregoing is to hold down weekly or monthly withdrawals to an absolute bare minimum. Then, periodically, as net earnings accumulate, an additional withdrawal is made, but always retaining a reserve against slack periods.

Thus, a contractor on a calendar year basis might make an additional withdrawal against net earnings on July 1 on the basis of accumulated

earnings, and a final drawing after year-end. Or, a quarterly draw may be employed to supplement monthly minimum draws.

Such supplemental withdrawals represent a time lag, but one in favor of solvency. It reduces the likelihood of overdrawing on the basis of net earnings for a year which does not come up to expectations.

A good many contractors mingle personal and business funds, dipping into business funds as needed, and without respect to availability for personal needs. Even though they attempt to limit such personal demands on the business, the very fact there is no arbitrary limit makes control difficult, if not impossible.

Other contractors using a personal budget draw an arbitrary amount each week or each month and deposit this in a personal bank account. They do not let their personal needs exceed the amount available in their personal account.

How can a personal budget be drawn up? Let's take an example. Suppose a contractor on the basis of his previous year's net earnings and present prospects estimates he should have an absolute minimum net earnings of \$12,000, or an average of \$1,000 a month. His business is growing, and he wants to re-invest part of his profits in the business. Here's how he might determine his personal drawings:

Estimated net earnings . . .	\$12,000
Less estimated income tax (standard deduction and 5 exemptions, joint return) . . . . .	1,872
Net earnings after income tax . . . . .	10,128
Reserves for year-end withdrawal and/or re-investment in business . . .	4,000
Available for weekly or monthly personal drawing	6,128
Safe weekly drawing, allowing for sharp drop in estimated earnings and for re-investment, about . . .	115

In setting up a budget for personal withdrawals from a business, it is much wiser to voluntarily limit these withdrawals than to have unpleasant events force such limitations upon a contractor.

**BUY FROM YOUR  
REFRIGERATION WHOLESALE**

## HELP WANTED...

Continued from page 31

it has been found that receiving "that first check" stimulates neighborhood women to double their efforts in search of still more prospects.

With around 50 "regulars" now steadily contributing prospect names, and a steady turnover of bonafide prospects arriving in the sales office, Curran's has found its want-ad advertising program an extremely valuable asset. Dozens of women who originally read the Help Wanted column in search of a part-time or full-time job, have elected to become "Curran representatives" instead, and are actually showing a better monthly income.

"The user, of course, is the best possible source of new residential or commercial air conditioning prospects," Curran acknowledges, "but only slightly behind is the popular housewife who keeps up with the affairs of her neighbors, knows when any of them are planning to purchase this type of equipment. Anything the dealer can do to enlist their help is bound to boost sales as it has for us."

## LAB REFRIGERATORS...

Continued from page 31

as the thermostat opens the control. The arcing motor load current definitely is the most hazardous as it breaks contact.

First step in the prevention of explosions from such causes is the removal of the magnetic switch from the interior of the cabinet to a location in the motor compartment.

In the case of the light in the cabinet interior, an explosion-proof type of switch should be substituted. If space limitations are too restrictive for this, then the switch should be placed on the outside of the cabinet, as in the case of the motor switch.

Final safeguard should be the placing of a permanent and prominent sign on the cabinet door for the benefit of those careless persons who otherwise might undo everything that has been done to make the installation as fool-proof as possible with a normal expense outlay.

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# NO MORE FREEZE-UPS

*of expansion valves or capillary tubes!*

## ICE-X works like magic

**SERVICE MEN SAY: "ICE-X IS GREAT!"**



When ice forms in expansion valves or capillary tubes, ICE-X is a sure remedy . . . ICE-X is non-corrosive —harmless to parts. An ice-eliminator that can't be beat for Freon, Carrene, or Methyl Chloride systems . . . Order from your jobber. If no jobber, order direct.



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when it comes from **Harry Alter**

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Exclusive ICE-X Distributor

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**YOU DON'T HAVE TO DO THAT! WE'RE IN. STALLING AN "HRC."**



**SAVE LABOR - SAVE TIME.  
SAVE MATERIAL  
SAVE 30% PLUS**

**SPOTAIRE SERIES HRC ROOM UNIT AIR  
CONDITIONERS ARE INSTALLED WITH  
ORDINARY PIPING - NO DUCT WORK**

NOW OLD BUILDINGS CAN BE AIR CONDITIONED WITHOUT COSTLY ALTERATIONS - SPACE REQUIREMENTS EASILY PROVIDED FOR WHEN PLANNING NEW CONSTRUCTION. NO MORE COMPLICATED ADJUSTMENTS OR ENGINEERING EXPENSE. SPOTAIRE HRC UNITS COOL, DEHUMIDIFY, FILTER, VENTILATE AND RECIRCULATE AIR. AVAILABLE FOR HOT OR COLD WATER. ALSO FOR USE WITH FREON.

**RECOMMENDED FOR MOTELS  
HOTELS, APARTMENTS, HOS-  
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... WHEREVER AIR CONDI-  
TIONING "ON THE Q.T." IS  
DESIRED. SPOTAIRE HRC UNITS  
ARE  
"QUIET BEYOND  
BELIEF!"**

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# What's the **RIGHT** **COMPRESSOR** **OIL** to use here?

OBVIOUSLY, the oil that won't "wax out" in the system, the oil that keeps compressors clean and efficient even at temperatures down to minus 100° F. — *Texaco Capella Oil (Waxfree)*.

Tests show that *Texaco Capella Oil (Waxfree)* has outstandingly low haze and floc temperatures, that it *won't precipitate wax*. Service in the field demonstrates its stability and resistance to oxida-

tion. *Texaco Capella Oil (Waxfree)* does not foam, is moisture-free, will not react with refrigerants.

Assure your customers the kind of compressor performance that recommends you to new business. There are *Texaco Capella Oils (Waxfree)* in viscosities to meet the needs of every type and size of compressor — available in 55-gallon drums, 5-gallon, 1-gallon and 1-quart containers — all *refinery-sealed* to protect their purity and quality.

The Texas Company, 135 East 42nd Street, New York 17, N. Y.



## **TEXACO** Capella Oils (Waxfree)

FOR ALL REFRIGERATING AND AIR CONDITIONING COMPRESSORS

TUNE IN . . . TEXACO STAR THEATER starring MILTON BERLE, on television Tuesday nights. METROPOLITAN OPERA radio broadcasts Saturday afternoons. Circle No. 69 on Reader Service Card



# THE COMMERCIAL REFRIGERATION and AIR CONDITIONING

## APPLICATIONS MANUAL

by William M. Brewer

Problems discussed in the Applications Manual are being written by William M. Brewer, vice president in charge of engineering, Refrigeration Sales Corp., Cleveland. Brewer, a registered professional engineer in the state of Ohio, will draw on his own personal experience in describing typical application problems encountered in the contracting field, and in answering questions sent in by our readers. We invite readers to submit their problems to this department. Each letter of inquiry will be answered personally by the author. All problems should be clearly and completely stated and addressed to: COMMERCIAL REFRIGERATION AND AIR CONDITIONING, Manual Dept., 1240 Ontario St., Cleveland 13, Ohio.

### PROBLEM

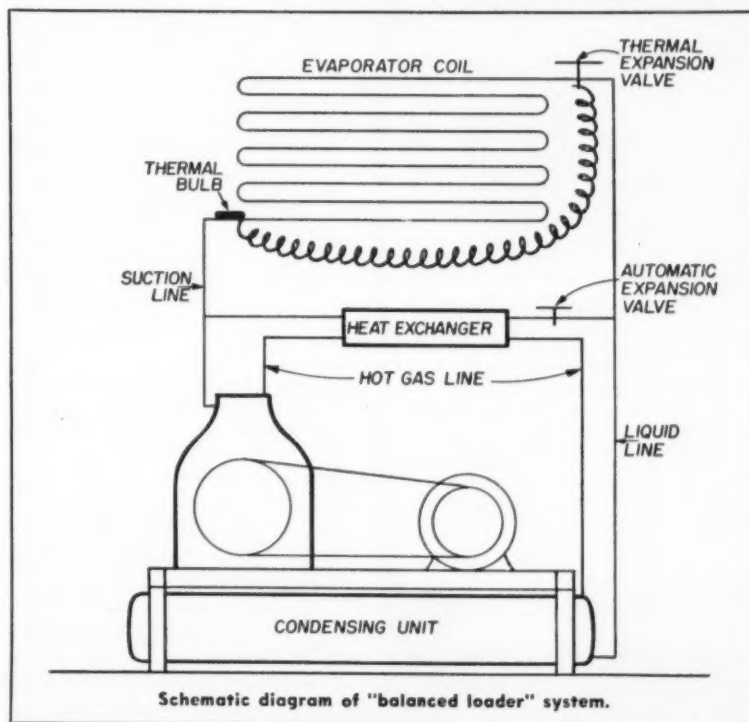
INDUSTRY'S requirements for refrigeration and dehumidification are daily becoming more numerous and varied. The various applications may consist of the refrigeration of solids, cooling of liquids, or cooling and drying of gases. These add up to a new and rapidly expanding source of business in the refrigeration field.

Many of these industrial problems, however, require unusual applications of refrigerating equipment which vary considerably from the standard methods used by the industry in the more familiar fields of refrigeration. Therefore, the installing contractor must depend largely on his own ingenuity to solve many of industry's problems.

As an example, one problem with which we were confronted not long ago consisted of dehumidifying the intake air to a drying oven. Due to the nature of the substance being dried, the oven could not heat over a certain temperature and it was determined that if the dew point of the entering air was over 50 F, the substance would not be properly dried in the time allowed.

When the entering air in the summer was at the maximum conditions of 95 F dry bulb and 75 F wet bulb

it was determined that a proper sized direct expansion coil and a standard 3-hp condensing unit would handle the job very nicely.



The real problem, however, presented itself when the entering air was just over the 50 F dew point. At these conditions the compressor would have virtually no load, yet would be required to run without frosting the coil.

### SOLUTION

It appeared that the use of a constant pressure suction regulating valve would be the answer. We had found from previous experience, however, that when a load might vary from 100% down to 0% a constant pressure valve would not hold at one setting over long periods of running time.

To prevent the coil from frosting during low load conditions a "balanced loader" was added to the standard compressor and coil system. The "balanced loader" consisted merely of a standard, proper-sized automatic expansion valve and heat exchanger.

By referring to the accompanying diagram it can easily be seen how such an assembly was adapted to the system.

To control the coil at the frost point, the automatic expansion valve was set to operate at 30 pounds for Freon-12. Thus, in operation, as the load on the coil reduces and the suction pressure tries to drop below 30 pounds, the automatic expansion valve opens, feeding liquid into the heat exchanger.

The liquid is expanded by the heat

of the hot gas and therefore enters the suction line in gas form. It can be seen that as long as the automatic expansion valve is feeding, the suction pressure in the coil will hold at 30 pounds, preventing frosting.

In such a case, where the load on the coil can drop to virtually nothing, the automatic expansion valve and heat exchanger must be sized to handle the full capacity of the condensing unit at 30 pounds suction pressure. Surprisingly, the heat exchanger does not have to be very large, due to the efficiency of the heat transfer between the suction gas of 32 F and the hot gas temperature, which may be 175 F.

#### DISTRIBUTES G-E IN FLA.

Mechanical Contractors Supply, Inc. of Winter Park, has been appointed sole distributor in Florida for the air conditioning and heating products of the General Electric Co. In addition, the Winter Park firm was given exclusive distribution rights in 14 Georgia counties along the northern Florida boundary. Paul J. Spellman is president and George J. Collins is vice president and general sales manager.

#### AIR RETURN TUNNEL AIDS STORE SYSTEM

An unusual arrangement for return air in the air conditioning system for the No. 4 store in the Dillon super market chain in Wichita, Kan., also simplified the installation and maintenance of refrigerant, electrical, water and drain lines serving the numerous pieces of open display cases and other fixtures.

A tunnel approximately 3½ ft. square runs beneath the forward sales area of the market at the side walls and at the front. Rear section of the tunnel is the full height of the basement under the back section of the store. All the refrigerant and drain lines, etc. run through the tunnel to the cases.

Return air is pulled back through the tunnel after having been picked up by intakes at floor level. Connected to the return air tunnel is also an outside air inlet. An automatically controlled damper admits outside air to the system, primarily to prevent the accumulation of odors in the market.

Summer air conditioning is provided by 58 F well water coils, and during the winter hot water is piped to the same coils from an American Radiator gas-fired hot water heater. A smaller hot water heater of the same make and type supplies heat for the snow-melting coils buried in the sidewalks and part of the parking lot.

Fans, filters and coils for the year-round air conditioning system are located in the basement close to the tunnel. The two hot water heaters are in a nearby room.

Also near the air conditioning system in the basement are the 11 Mills water-cooled condensing units which serve 80 feet of Hussmann open meat cases, 30 feet of Weber open dairy cases, 32 feet of Weber open frozen food cases, and 40 feet of Viking produce cases in addition to meat and produce walk-ins. A Governair unit air conditions the prepackaged meat cutting and wrapping room.

**BUY FROM YOUR  
REFRIGERATION WHOLESALE**

## Buy Peerless FOR PERFORMANCE

### DRIP-PUMP for Condensate on Air Conditioners



The Peerless Drip-Pump solves the troublesome drainage problem—on air conditioners, coolers, refrigerators and other machines where condensate is present—by eliminating hazardous gravity drains altogether! The Drip-Pump lifts condensate up and out, overhead . . . saves valuable space.

Illustration shows Model DP-2 high capacity high lift pump for air conditioner applications. Also available is Model DP-1 packless centrifugal type pump, driven by "flea-power" motor . . . the ideal pump for use for dome, unit or flash coolers. Both models are ruggedly built for long, hard service; easily and quickly installed. Write for full information.

**Peerless of America, Inc.**

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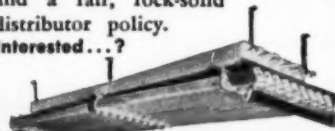
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## Tenney's On the Move!



... with top-flight refrigeration equipment like this coil and pan combination—backed by the finest engineering and a fair, rock-solid distributor policy.

Interested . . . ?



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ENGINEERING, INCORPORATED

NEWARK, NEW JERSEY

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Display Refrigerator

Gem Refrigerator Company, custom maker for 30 years, now makes competitively priced commercial refrigerators with custom features.

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# GEM

REFRIGERATOR CO.

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Circle No. 72 on Reader Service Card

## Modern Air Conditioning Systems Aids Medical Research

Modern air conditioning techniques are making a significant contribution to the progress of medical research by providing positive regulation of important environmental factors.

This contribution is highlighted by a report by United States Air Conditioning Corp. of varied solutions to the problems of temperature, humidity and dust control in experimental animal rooms in three leading American medical institutions.

### Animals Need Conditioning

Three different types of conditioning equipment are involved in the installations which have been made in the animal wing of the Veterans Administration Hospital, nearing completion in Syracuse, N. Y.; in an experimental rat room in the New York University-Bellevue Medical Center in New York City; and in two animal inoculating rooms in the Grayson Foundation Laboratory of the University of Maryland, in College Park.

The VA hospital animal wing contains three rooms, including operating and feeding rooms. Specifications call for summer cooling and winter heating by a completely self-contained air conditioning plant including filters, heating and cooling coils, blowers, compressor, condenser and spray humidifier. The equipment, supplying 100% fresh air, must provide at least four tons of cooling, heating from -10 to 80° F and must deliver 350 cfm against 1/2" static pressure.

### Special Requirements Met

These specialized requirements have been met by a modification of a 5-ton USAIRCO RK self-contained unit. A filter section, containing filters, steam distributing type coil and spray humidifier, was erected at the fresh air intake flange on the packaged equipment, which itself includes compressor, evaporative condenser and air handling sections. The unit so created met all of the specifications in a single casing measuring only 76" long, 30" wide and 56" high. The equipment is connected by a simple duct system to the areas to be conditioned. The Heating Maintenance Corp. of New York, contractor, made the installation.

More than 100 rats, being used in balance experiments involving the collection of urine, are kept in cages lining the walls of the experimental



**IN THE Grayson Foundation Laboratory of the University of Maryland, USAIRCO Modulare room air conditioners have been equipped with specially developed filters to deliver air as nearly free from dust as possible to two experimental animal inoculating rooms. The units' three-speed fan motors provide control of air volume to meet the particular needs of each type of animal.**



**ACCURATE and consistent maintenance of temperature and humidity conditions affecting the body functions of the animals are essential to the success of the work carried on in the experimental rat room in the Department of Medicine of the New York University-Bellevue Medical Center. A USAIRCO 1/2-ton window type room air conditioner provides the humidity control and also extends the working year for the experiments into the warm weather months.**

rat room in the Department of Medicine of the New York University-Bellevue Medical Center. The quantitative nature of the work demands accurate and consistent maintenance of temperature and humidity conditions which have an important effect on the body functions of the animals.

The Climaco Corp., contractor, installed a USAIRCO 1/2-ton window

type room air conditioner in the room's only window. The equipment not only provides humidity control but also extends the time of the year during which the experiments can be carried on into the warm weather months. During the winter days, heat is provided by the building's plant, but at night, when the main system is not operating at full capacity, a bat-



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temperature indicator

3-way  
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INSTRUMENT AND GAUGE DIVISION  
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Rigid stem or capillary tubing for EYE-LEVEL remote reading. Priced from \$22.

## TEMPERATURE INDICATORS & RECORDERS



tery of electric heat lamps is turned on to maintain proper conditions. The air conditioner and the lamps are thermostatically controlled.

In the Grayson Foundation Laboratory, USAIRCO Moduaire room air conditioners are utilized to deliver specially filtered air to two experimental inoculating rooms. The systems are required to deliver air as nearly free from dust as possible, in varying amounts dependent upon the type of animal undergoing inoculation.

The units have been equipped with a dense filtering material specially designated by the laboratory staff for this purpose, and their three-speed fan motors provide control of air volume to meet the particular needs of the animals. This variable-speed motor feature also can be used to compensate for a reduction in the amount of air delivered as the filters become loaded up with dust and other foreign matter.

The systems were designed by H. W. Redmile, consulting engineer, and were installed by the William H. Singleton Co., Inc., contractor.

## GLAMOR FREEZER



**FANCY ENOUGH** to be in the living room, this circular freezer table was dreamed up by engineers of Jordon Refrigerator Co. for the recent "Made in Greater Philadelphia" Show, to display frozen foods. But it created so much interest that it may be produced commercially for use in food and grocery stores and in food service establishments. The table in a two-tiered affair with refrigerator coils built into each tier. It is powered by a freezer unit with hermetic motor incorporated into the base of the table. Food can be kept indefinitely on the open shelf tops, Jordon engineers claim.



## 185-HOME DEVELOPMENT HAS YEAR-ROUND UNITS

A glimpse into "Tomorrow's Home—Today" was offered recently with the formal opening of the first unit of a 185-home development at Stratton Heights, in the Wilmot Woods area of New Rochelle, N. Y., the largest residential community in the east to be fully air conditioned for year-round comfort.

The new homes, all to be equipped with Carrier Weathermaker air conditioning units providing cooling in warm months and heating in winter with dehumidifying control, will be on the ranch-style and split-level designs. Prices for the two designs will range upward from \$26,900 and \$28,500, respectively.

## SALES UP 15%

Sales of Remington air conditioners in the U. S. and abroad during 1952 amounted to more than \$3,250,000, an increase of better than 15% over the previous fiscal year, according to Herbert L. Laube, Remington president.

## HOME "ICE MAKER"



THE SHAPE of things to come in the ice cube field is shown in this "ice circle" taken from Servel's new "Ice Maker" refrigerator, which freezes ice cubes without trays. The ice is moulded in half-moon shapes instead of cubes. The new method is said to eliminate manual filling and emptying of ice trays. As the "ice circles" are removed from the basket in which they are stored in the refrigerator, the ice-making unit automatically replaces them, stopping only when the basket is refilled.

**BUY FROM YOUR REFRIGERATION WHOLESALE**

## LINDER IS ELECTED G-E VICE PRESIDENT

The election of Clarence H. Linder, general manager of the General Electric Co.'s Major Appliance Div., with headquarters in Louisville as a vice president of the company, has been announced by G-E president, Ralph J. Cordiner.

Linder's headquarters will continue to be in Louisville at 310 West Liberty St. until completion of the new Appliance Park now under construction. He has been in charge of the Major Appliance Div. since April, 1951, when the Company first announced its plans for establishment of Appliance Park.

## NAMED REPRESENTATIVE

DeBothezat Fans Div. of American Machine and Metals, Inc. has announced the appointment of H. S. McKenzie Co. as their new representative for Oregon and southern Washington. They will handle DeBothezat's complete line of industrial ventilating equipment, with offices at 100 Northeast Holladay, Portland 14, Ore.

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Jarene "B" Vinyl Plastic is an exclusive Jarrow compound. It is long lasting, weather resistant, compresses easily and is flexible to almost any degree from soft to semi-hard. Offered in a wide choice of colors.

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For the latest Larkin price list, see your wholesaler. If you wish, write direct to us. We shall be glad to send you one.

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## big new air conditioning market for Ranco controls

Air conditioning is the big, fast growing market for refrigeration controls. You can cash in on it with the new Ranco models. In addition to exact replacements, the new Ranco general replacement control can be used to modernize many units not originally equipped with controls, without the use of special tools. See your wholesaler about Ranco models available for refrigeration applications.



# Ranco Inc.

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WORLD'S LARGEST MANUFACTURER OF REFRIGERATION CONTROLS  
Circle No. 78 on Reader Service Card

## THE SERVICE MAN'S DEPARTMENT

# HERE'S HOW!

### Start Your Pre-Season Conditioner Checks Now

It won't be very long now before many air-conditioning units all over the country, which have been idle all winter, will be put back into operation for the coming hot months.

Now, then, is the logical time for you to start contacting your air-conditioner service customers for the purpose of inspecting their

conditioner removed during the hot, muggy season because of the omission of a pre-season checkup.

A careful explanation to your customers of the fact that "an ounce of prevention" will save them many headaches in the long run, can create invaluable good will for you and your business.

It's exceedingly bad business to take chances on a unit being in tip-top shape after a hard winter season. And it's even worse for your business if, later in the summer, the unit breaks down and necessitates lengthy and costly repairs.

Start making plans now to canvass your air conditioner service customers and make them aware of the conditions that spell longer life and greater efficiency for their air conditioning units.



### WANT TO EARN \$5?

Then dream up some good idea for saving yourself time, money, or aggravation on a service call, and tell us all about it. Just jot it down on the nearest scratch pad, together with a sketch if you think that would help, and send it to Here's How Editor, Commercial Refrigeration and Air Conditioning. If the Editor agrees that your idea is worthwhile, he'll make your dream come true by publishing it in the magazine and promptly sending you a check for \$5. Why not start reaching for that pencil now?

### I DO IT THIS WAY

I HAVE found the following procedure very useful in charging oil into sealed units. I use an old drier that has a removable end. After cleaning it thoroughly, I mount it on the hermetic adapter in a vertical position by means of a short piece of tubing.

Then, with the valve off, I fill the drier with oil to the top so as to exclude the air. I attach the quarter-inch flare adapter into the drier opening and attach the gas drum.

With the machine running and a little gas pressure, enough oil is pushed into the unit to get it started pumping. Having done this I adjust the gas charge in the unit to remedy the usual cause of the oil staying in another part of the system.

Harold J. Huber, Bothell, Wash.

units, cleaning them up, and making any necessary adjustments that will prevent trouble or breakdown at a later date when the equipment is really needed.

Any general air conditioner checkup should include replacing of filters, cleaning out interior of units, oiling fans, and cleaning any screens in the units, as well as any obvious or unusual defects you may notice when making the check.

Nothing is more aggravating to a customer than to have his air con-

### Cold Drier May Indicate That Filter Is Plugged

One of the simplest ways of determining whether or not the filter in a refrigerant drier is plugged is to feel the drier itself. If the drier is cold, there is a good chance that the filter is plugged.

If this is the case, the best thing to do is to cut the drier open and find out why it is plugged. A careful examination of the contents may reveal some interesting and important things about the condition of the system.

If sludge shows up on the filter pad, it can be an indication of dirty oil. This would indicate that an oil change is in order.

Solder paste and tube filings can be easily recognized if deposited on the filter pad, and are an indication that the system wasn't properly cleaned before being put into operation.

### What To Look For If Conditioner Won't Start

One of the more common complaints encountered in the servicing of air conditioners is the situation wherein the unit shows signs of trying to start, but just can't seem to make the grade. Usually, in such instances, the relay keeps clicking and/or the motor hums.

The cause of this trouble may be any one of three things: low line voltage, defective relay, or defective starting condenser.

To remedy this situation, first check the line voltage. The voltage at the outlet should not deviate more than 10% from no load voltage.

Next check the relay for a shorted holding winding, and poor or mal-

## Handy Bender says



**"Hard tubing is a lead pipe cinch"**

"Even the jobber that I get my tubing from didn't believe that I could bend  $\frac{5}{8}$ " type L copper tubing. He wanted to sell me fittings, to hook up a new unit I was putting in at the super market. But I saved time and saved money by doing it my way. And the store manager said it was the cleanest job he ever saw. How are you doin' it?"

*Handy*

Ask your supply house — or write us

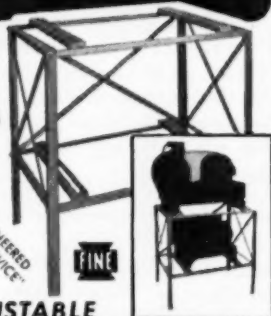
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NEW—Packless LIQUID LEVEL GAUGES

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adjusted contacts. A reliable check can be made by substituting a relay of known performance.

Finally, check the capacitor by substituting one that you know is good.

## I DO IT THIS WAY

USE Neoprene rubber instead of the usual copper gaskets in my hermetic kit. I find them absolutely leak proof and tightenable without a wrench. Some sealed units have very weak valve connectors and the use of the rubber gaskets puts no undue strain on them. The extra gasket which come with outside terminals for hermetic units can be used if cut to size.

Joe Hartlager, Green Bay, Wis.

## Solder Flux Mixed With Oil Is "Bad Medicine" for System

Where a job has been installed with sweat fittings and an acid flux has been used, it is not a wise idea to pull a vacuum to dry out the system with its own condensing unit. Some remnants from the flux may get into the oil, and this combination can gum up a system very quickly.

## Handle Replacement Units Properly

In looking over the reams of manufacturer's service literature which we regularly receive, we have noted lately a number of comments on the slipshod way in which many dealers handle the return of units to the factory for replacement.

All of these manufacturers have stressed the point that every dealer and serviceman should, in his own self interest, handle all such shipments properly. They specifically suggest that all units sent in to the factory for replacement be properly crated or packaged to avoid damage in shipment, and properly tagged to avoid confusion and delay.

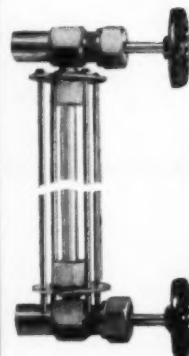
Carrying out these suggestions, the manufacturers maintain, will inevitably result in speedier and more efficient handling of all replacement orders.

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## ALL-STEEL GAUGE SETS

All-Steel Construction. Automatic shutoff of liquid in case of glass breakage. Composition packing rings give long life, no-leak seal.

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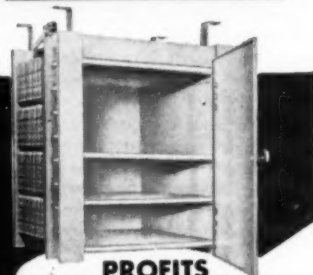
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Rates: for "Positions Wanted, \$4.00 minimum, limit 25 words. For all other classifications, \$4.50 minimum for 25 words or under, each additional word 15¢; boldface type or all capitals, \$7.50 minimum for 25 words or under, each additional word 20¢.

### POSITIONS AVAILABLE

**HEAT PUMP FIELD ENGINEER**—large manufacturer requires field engineer qualified to assist distributors on heat pump application, installation and service problems. Educational background in mechanical or electrical engineering and at least 2 years practical experience in air conditioning or remote refrigeration field service essential. Submit complete resume with reply to Box 2153, COMMERCIAL REFRIGERATION & AIR CONDITIONING.

**HEAT PUMP SALES REPRESENTATIVE**—leading manufacturer of electrical equipment needs sales representative to develop distribution and sales of packaged heat pumps in assigned territories in South and Southwest. Growth potential of this business is excellent. Applicant must have a minimum of 3 years experience selling air conditioning, remote refrigeration or similar specialties to users and distributors. A working knowledge of refrigeration cycle and air conditioning required.

Give full details on experience, education and salary requirement to Box 2253, COMMERCIAL REFRIGERATION & AIR CONDITIONING.

**NATIONAL SALES MANAGER-AIR CONDITIONING**—Top Paying Job For Top Man Who Meets These *Musts*: Must be, or have been recently, in executive capacity with manufacturer of nationally distributed room air conditioners. Must have experience dealing with leading distributors and key accounts. Must have ability to organize sales and distribution set-up for multi-million dollar yearly sales potential. Locate in New York City, with manufacturer offering most attractive sales story in the industry. Replies will be held in strict confidence! Box 2353, COMMERCIAL REFRIGERATION & AIR CONDITIONING.

### TRAINING AVAILABLE

Course on sealed unit rebuilding trade secrets disclosing exclusive methods for all operations. \$12.50 or write for details. H. Custer, Box 98, Center Line, Michigan.

### BIG COOLING CONTRACT

A \$250,000 contract has been awarded to Hill-York Co. of Miami to install complete air conditioning equipment in the downtown Seybold Bldg. A circulating chilled water system will be used.

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If you're looking for an opportunity to grow with an expanding company . . . if you like to work with an alert, progressive organization . . . if you want the prestige of association with a leader in

### SERVICE ENGINEERS

For field service on refrigeration or heating equipment. Headquarters at main plant.

### SERVICE MANAGER

To take full charge of repair and service department at main plant, and supervise nation-wide field-service repair stations.

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Sales engineers capable of handling contact and sales to refrigeration-equipment manufacturers. Experienced salesmen to handle established and potential wholesaler, dealer and service accounts.

Excellent working conditions, exceptional retirement plan, group insurance, paid vacations, incentive bonus and other outstanding

the control field — chances are there's a place for you at "A-P."

Due to extensive expansion plans, we are looking for experienced men for the following positions:

employee benefits make A-P a splendid place to work. Address

Executive Vice-President:

## A-P CONTROLS CORPORATION

2486 N. 32nd Street

Milwaukee 45, Wisconsin

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### REPLACING THE ENTIRE GASKET ON FRIGIDAIRE AND COLDSPOT DOORS . . .

Most door seals of Frigidaire and Coldspot deteriorate only at the bead. Stop repairing them the old way. Now you don't have to take 3 or 4 hours to dismantle the door and replace the entire seal. Use Revolutionary NU-BEAD and get a quick, clean repair in 15 to 20 minutes that will satisfy the most exacting customer.

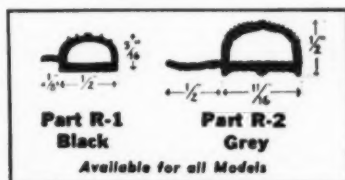
USE

**WATSCO** **NU-BEAD**

The Replacement Door Gasket



1. Simply cut away the deteriorated bead with a sharp knife. Don't worry about any irregularities in the trimming as the NU-BEAD covers up all the defects.
2. NU-BEAD is made of finest grade natural rubber in 12 ft. lengths with a special adhesive already applied at our factory.



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Write Now for Catalog No. 17 Featuring our complete line of Parts & Tools.

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REFRIGERATION PARTS AND TOOLS

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